THE

Journal *of* Home Economics

Home, Institution, School

Vol. IV JUNE, 1912 No. 3

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Catherine E. Beecher, 1800-1878.
Author of *A Treatise on Domestic Economy.*

By courtesy of the *American Magazine.*

THE
Journal of Home Economics

VOL. IV. JUNE, 1912 No. 3

MISS CATHERINE E. BEECHER, THE PIONEER IN HOME ECONOMICS.

BENJAMIN R. ANDREWS, PH.D.

Teachers College, Columbia University.

Among the founders of the Home Economics movement in America, Miss Catherine E. Beecher is to be accorded first place. During the years from 1830 to 1875, she did for American education a work that may be properly compared to the services of Ellen H. Richards in the following generation. Miss Beecher was the eldest of the famous Beecher family, which included the father, Lyman Beecher, a leading American clergyman and President of the Lane Theological Seminary at Cincinnati; Catherine Beecher, the subject of this sketch; Harriet Beecher Stowe; and six brothers who were ministers, including Henry Ward Beecher and Thomas K. Beecher.

Miss Catherine Beecher (1800–1878) was born at East Hampton, Long Island. We first know of her, however, in any public way, in connection with her school for girls which she established at Hartford, Conn., about 1822, and conducted there for ten years. This school seems to have been perhaps the best school of its day, with an advanced curriculum semi-collegiate in nature, including advanced instruction in Latin, mathematics, and other subjects. For this school and other schools like it, Miss Beecher wrote text-books in arithmetic, ethics, and physiology. A nervous breakdown compelled her to give up the school about 1832 and she then made her home in Cincinnati, where she was associated with her sister, Harriet Beecher, who had opened a school in that city. After some years, this school was given up and Miss Beecher's later life was devoted to public movements educational in nature, and to writing and lecturing.

A study of her books and of the movements in which she was engaged shows several definite centers of activity in her life. She was interested in the general education of girls. Her own schools at Hartford and Cincinnati were one indication of this interest, as were her text books. She thought of education as a great agency for national development, and so she was satisfied with nothing less than plans for national improvement. The broad scope of her thought is indicated by her essay of 1835 on *The Education of Female Teachers*, which had for its central thought the idea that women would find in teaching a profession to which their hand would turn naturally, and that the country was suffering from the lack of service of the sort which women teachers could give. This same idea is expressed even more vigorously in her address of 1846 entitled, *The Evils Suffered by American Women and American Children; the Causes and the Remedy*, and had led meantime to the organization of a national movement for the training of women teachers and to the establishment of public and private schools throughout the country in which they might serve.

It was at this time that she organized the Central Committee for Promoting National Education and secured the coöperation of a large number of people throughout the country, obtained the services of former-Governor Slade of Vermont as secretary and field-agent of the Committee, and initiated activities which resulted in the placing of one thousand women teachers in as many different centers, largely throughout the West. Interested as she was in the welfare of the country and the welfare of women, she grasped the fundamental fact that the home is the social institution through which woman's work for society must largely be done; so one finds from the first that she paid the greatest regard to the training of girls in the interests and activities of the household. This was evident in the schools which she conducted and in the reference in the address of 1835 on the education of women teachers. In this she urges that household arts should be included as a subject of instruction in girls' schools, although she had not yet organized the subject-matter in this field as she did six years later, in her *Treatise on Domestic Economy* published in 1841. This book, which is the one most commonly associated with Miss Beecher's name, is the first modern book treating of the household in a large way, fully conscious of its importance as a social institution, fully aware of the great interests centered in it, and of the primary fact that women must be trained in the practical matters of food, household management, care of children, and all standards of home life and com-

munity life, if the home is to fulfill its high possibilities. The *Treatise* was followed a year later by the *Domestic Receipt Book*, a handbook of recipes and procedures. We shall speak of the *Treatise* more in detail.

The address of 1846 on the *Evils Suffered by Women and Children* is a striking statement of the conditions of illiteracy and ignorance which prevailed in the United States at that time, the low condition of the public schools, and the possibilities inherent in the profession of teaching, especially if women will recognize it as a calling for which they are particularly adapted and for which it would be possible to make preparation as thorough and as dignified as that which prepares for other professions. The address is important from the Home Economics point of view, in that domestic economy is now urged as an essential element in the education of girls. The writing of the *Treatise* and the *Domestic Receipt Book* had made clear to Miss Beecher the fact that household management could be organized as a subject of instruction and made available for the training of young women.

In 1852 Miss Beecher organized the American Woman's Education Association, the first organization of women, so far as the writer knows, directed toward the improvement of education. This association seems to have remained active for twenty years at least, and to have done important service in preparing the way for the professional training of young women in domestic economy.

Meanwhile, Miss Beecher herself was still writing. In 1855 her *Letters to the People on Health and Happiness* was published and in 1856 appeared a *Physiology and Calisthenics for Schools and Families*. From 1869 to 1874 Miss Beecher was again actively engaged in compiling and publishing material on domestic economy. *The American Woman's Home* by Miss Beecher and her sister, Harriet Beecher Stowe, appeared in 1869. It is really a revised and enlarged edition of the *Treatise*. Other titles appeared in the succeeding five years. The *Principles of Domestic Economy*, *Principles of Domestic Science*, and Miss Beecher's *House-Keeper and Health-Keeper*, all published in 1873, were, perhaps, revisions and enlargements of the materials which were first brought together in 1841. There is in these books and the earlier writings a rich field for the student of the Home Economics movement. We may speak somewhat in detail of two of Miss Beecher's writings: The essay of 1835, and the *Treatise on Domestic Economy*, and of the American Woman's Education Association, particularly in their relation to Home Economics.

An Essay on the Education of Female Teachers (1835).

Miss Beecher's views of woman's usual work in the home and the preparation needed for it come out in the essay of 1835, although its main point was to urge the need of training women as teachers. Teaching, in her mind, was to be the preface to home life; and was the best preparation for it, as these quotations show:

> Another object to be aimed at in regard to female education is to introduce into schools such a course of intellectual and moral discipline, and such attention to mental and personal habits, as shall have a decided influence in fitting a woman for her peculiar duties. What is the most important and peculiar duty of the female sex? It is the physical, intellectual, and moral education of children. It is the care of the health and the formation of the character of the future citizen of this great nation.
>
> Woman, whatever are her relations in life, is necessarily the guardian of the nursery, the companion of childhood, and the constant model of imitation; . . . And what demands such discretion, such energy, such patience, such tenderness, love, and wisdom, such perspicacity to discern, such versatility to modify, such efficiency to execute, such firmness to persevere, as the government and education of all the various characters and tempers that meet in the nursery and school room? Woman also is the presiding genius who must regulate all those thousand minutiae of domestic business, that demand habits of industry, order, neatness, punctuality, and constant care. And it is for such varied duties that woman is to be trained.

Speaking of the training necessary for woman, Miss Beecher says:

> The mere committing to memory of the facts contained in books is but a small portion of education. Certain portions of time should be devoted to fitting a woman for her practical duties; such for example, as needlework. Other pursuits are designed for cultivation of certain mental faculties; others to cultivate taste and imagination; some to form the moral and religious nature; others to store the mind with knowledge.

So in this early sketch of education Home Economics finds a place as a subject of practical instruction.

The Treatise on Domestic Economy.

The *Treatise on Domestic Economy* may be characterized as the first text-book in Home Economics. Books of recipes had often been compiled at earlier times, but here is a treatment of the household which distinctly sets aside the directions and recipes for a separate book, and endeavors to discuss the home and the management of the household from a theoretical point of view. One finds practical procedures in the *Treatise*, it is true, but all in a setting of general principles.

There is in it something of the largeness of view and breadth of understanding which makes the *Econimicus* of Xenophon a book for all time. The *Domestic Economy*, in brief, is a classic. There is surely this quality in the well-known quotation from the preface to the third edition:

> The author of this work was led to attempt it, by discovering, in her extensive travels, the deplorable sufferings of multitudes of young wives and mothers, from the combined influence of poor health, poor domestics, and a defective domestic education.
>
> The measure which, more than any other, would tend to remedy this evil, would be to place domestic economy on an equality with the other sciences in female schools. This should be done because it can be properly and systematically taught (not practically, but as a science), as much so as political economy or moral science, or any other branch of study; because it embraces knowledge, which will be needed by young women at all times and in all places; because this science can never be properly taught until it is made a branch of learning; and because this method will secure a dignity and importance in the estimation of young girls, which can never be accorded while they perceive their teachers and parents practically attaching more value to every other department of science than this. When young ladies are taught the construction of their own bodies, and all the causes in domestic life which tend to weaken the constitution; when they are taught rightly to appreciate and learn the most convenient and economical modes of performing all family duties, and of employing time and money; and when they perceive the true estimate accorded to these things by teachers and friends, the grand cause of this evil will be removed. Women will be trained to secure, as of first importance, a strong and healthy constitution, and all those rules of thrift and economy that will make domestic duty easy and pleasant.

The author wishes also to make plain the fact of her fitness for the work which she undertakes. She mentions her qualifications as "being the eldest of a large family, she has, from early life, been accustomed to the care of children and to the performance of most domestic duties. It has also been her good fortune to reside, most of her life, in the families of exemplary and accomplished housekeepers, and under the supervision of such friends, most of the domestic operations, detailed in this work, have been performed by the writer."

One can get the best view, perhaps, of the scope of the book by the list of chapter headings: Peculiar responsibilities of American women; difficulties peculiar to American women; remedies for the preceding difficulties; on domestic economy as a branch of study; on the care of health; on healthful food; on healthful drinks; on clothing; on cleanliness; on early rising; on domestic exercise; on domestic manners; on the preservation of a good temper in a housekeeper; on habits of sys-

tem and order; on giving in charity; on economy of time and expenses; on health of mind; on the care of domestics; on the care of infants; on the management of young children; on the care of the sick; on accidents and antidotes; on domestic amusements and social duties; on the construction of houses; on fires and lights; on washing; on starching, ironing, and cleansing; on whitening, cleansing, and dyeing; on the care of parlors; on the care of breakfast and dining rooms; on the care of chambers and bedrooms; on the care of the kitchen, cellar, and storeroom; on sewing, cutting, and mending; on the care of yards and gardens; on the propagation of plants; on the cultivation of a fruit; miscellaneous.

Space does not permit of course detailed quotations from the different sections of the work. Something of typical chapters however may be offered.

The *Domestic Economy* opens with an argument as to woman's place and work in the social order. The American nation is demonstrating the principles of democracy to the world, and woman as teacher and as home-manager has a share in this work in nowise second to that of man. This was the splendid world-view to encourage and inspire the home-woman.

Miss Beecher holds to an equality of man and woman which means that "in theory and practice women's interests are regarded as of equal value . . . though women are made subordinate in station. . . . . In civil and political affairs, American women take no interest or concern; . . . . In education, in the selection and support of a clergyman, in benevolent enterprises, and in all matters relating to morals or manners they have a superior influence." The success of a democracy "depends upon the intellectual and moral character of the people;" and this turns upon education. The "proper education of a man decides the welfare of an individual; but educate a woman and the interests of a whole family are secured."

We have then this view of "the peculiar responsibilities of American women" (Chapter I) that, in a republic, education and the home are the fundamental influences. But "difficulties peculiar to American women" (Chapter II) arise through the social situation in a pioneer country, in which at the West life was especially hard upon women, while at the East European influences were beginning to be felt. There is the emulation of the wealthy along with the absence of any special servant class. On the other hand, American women seem to suffer from delicacy of constitution, through the lack of proper exercise and

physical care, and through the burden of housekeeping due to the lack of any particular preparation for it.

As "remedies for these conditions" (Chapter III), Miss Beecher has the following suggestions: She urges that the physical and domestic education of daughters should occupy the principal attention of mothers, and less time should be given to school and more to domestic employments, especially in the wealthier classes; that the science and practice of domestic economy should be made a regular study in girls' schools; and finally that institutions for the training of girls should be suitably endowed under permanent boards of trustees, with proper courses of study. In regard to the last point, it may be recalled that Mary Lyon's campaign for an endowed institution in Massachusetts had resulted in the opening of Mount Holyoke Seminary four years earlier, although Miss Beecher seems to share with her the credit for the idea that higher schools for women could succeed permanently only if endowed.

The chapter on Domestic Economy as a Branch of Study is a sound argument for Home Economics in education, which is still fresh and applicable.

> There is no period in a young lady's life when she will not find such knowledge useful to herself and others. . . . . Every young lady at the close of her school days, and even before they are closed, is liable to be placed in a situation where she will need to do, herself, or to teach others to do, all the various processes and duties detailed in this work. . . . . As a general fact, young ladies will not be taught these things in any other way. Mothers will not teach them for they are not themselves qualified to teach a proper and complete system of domestic economy. The objection that such matters cannot be taught by books will not hold, nor, granting that such studies may be pursued in books, may we be satisfied with the reading of such books rather than courses of instruction. . . . . Another reason for introducing such a branch of study into female schools is the influence it would exert in leading young ladies more correctly to estimate the importance and dignity of domestic knowledge. It is now often the case that young ladies rather pride themselves on their ignorance of such subjects; and seem to imagine that it is vulgar and ungenteel to know how to work. . . . . And let the young women of this nation find that domestic economy is placed in schools on equal or superior grounds to chemistry, philosophy, and mathematics, and they will blush to be found ignorant of its first principles, as much as they will to hesitate respecting the laws of gravity or the composition of the atmosphere. But, as matters are now conducted, many young ladies know how to make oxygen and hydrogen and to discuss questions of philosophy or political economy far better than they know how to make a bed and sweep a room properly; and they can "construct a diagram" in geometry with far more skill than they can make the simplest article of feminine dress.

Chapters follow on the care of health, presenting a basis in physiological knowledge for proper food, drink, clothing, and personal habits. The chapter on clothing raises a question of today in stating that infant mortality is a great problem owing to mismanagement in fresh air, food, and clothing. In old books, one is always tempted to quote those things which seem out of touch with present day ideas and customs and so Miss Beecher's chapters on Early Rising, and Preservation of a Good Temper in a Housewife, have often been referred to. Her treatment of early rising is especially interesting as it brings to bear arguments in social economy and national wealth in support of the practice which one may assume was going out of fashion in her day with the growth of town life. The chapter on Good Temper really merits quotation. The importance of its general relation to the household situation, and the practical means of effecting it, both come in for due attention. The argument contains thoughts that are still useful. There is sound psychology in the statement that a woman, who has charge of a large household,

> should regard her duties as dignified, important, and difficult. The mind is so made, as to be elevated and cheered by a sense of far-reaching influence and usefulness. . . . . A housekeeper should feel that she really has great difficulties to meet and overcome. . . . . A third method is for a woman to deliberately calculate on having her best arranged plans interfered with; and to be in such a state of preparation that the evil will not come unaware. . . . . Form all plans and arrangements in consistency with the means at hand, and the character of those around . . . . . System, economy and neatness are valuable only so far as they tend to promote the comfort and well-being of those affected.

Among the most valuable discussions are the chapters on System and Order, and Economy of Time and Expense. They show that our modern ideas of efficiency in business and scientific management had occurred to the mind of this remarkable woman. The chapter on Giving in Charity is in some ways a prophecy of our modern organization of philanthropy. An interesting section in it is Miss Beecher's reference to household accounts, and her suggestions as to a budget. We should divide household accounts, she thinks, into three general heads: First, food, clothing, and all necessary expenses of living; second, expenditures paid for education, books, and other intellectual advantages; third, expenditures for benevolence and religion. She then offers the very suggestive rule that it is right to add to necessary expenditures a further "portion of time and means in securing the conveniences and adornments of taste; but this amount should never exceed what is

spent in securing our own moral and intellectual improvement, nor exceed what is spent in benevolent efforts to supply the physical and moral wants of our fellow-men." In other words, do not let mere refinements in living outweigh personal improvements and culture, nor this again exceed social-welfare expenditures.

It would be interesting to quote further. While we must dismiss the *Domestic Economy* with these quotations, we may recall the fact that it went through edition after edition both in New York and Boston, was adopted soon after its first appearance into the Massachusetts School Library, and through a generation proved itself the most useful of books on the household until it was supplanted by the revision of 1869, *The American Woman's Home or Principles of Domestic Science*, and other volumes from the same author.

American Women's Education Association.

This first educational association of American women will be interesting to students of Home Economics, for it was, in a sense a forerunner of the American Home Economics Association. Established about 1852, its aim was no less than the establishment of professional schools to be affiliated with literary institutes in which young women might be trained in Domestic Economy, Teaching, and Physical Training, the "three aspects of woman's profession." Here was proposed the idea of our technical colleges for women of today. Though the effort did not succeed, it doubtless laid foundations on which the college departments of domestic science in the state colleges of the middle West were unconsciously laid in the seventies and which contributed to all the growth of Home Economics in the last forty years. Miss Beecher's statement in 1855,[1] in the *Letters to the People on Health and Happiness*, is as follows:

> The name of this organization is the American Woman's Educational Association. Its object, as stated in its constitution, is "to aid in securing to American women a liberal education, honorable position, and remunerative employment in their appropriate profession; the distinctive profession of woman being considered as embracing the training of the human mind, the care of the human body in infancy and sickness, and the conservation of the family state."
>
> The leading measure to be pursued by the association is the establishment of permanent endowed institutions for women; the "endowments" being employed "to furnish the salaries of three superior teachers in each institution, who shall take charge of the three departments set forth as constituting the profession of woman."

[1] See *Letters to the People on Health and Happiness*, by Catherine E. Beecher, New York, 1855. Also, the *American Woman's Home*, 1870. (Appendix.)

The mode in which this effort has been carried out has been to seek the coöperation of a large town or city in founding such an institution, by the offer, on the part of the association, of a library and apparatus, and a permanent endowment of twenty thousand dollars for the above purpose, on condition that the citizens erect a suitable building, and insure an income from tuition fees that will support four teachers for the literary departments.

This offer was made to the citizens of Milwaukee, Wisconsin, and of Dubuque, Iowa. The result has been the erection, in each of these cities, of a large and beautiful edifice for such an institution. In Milwaukee about two hundred pupils, and in Dubuque nearly one hundred, are in a course of study in the institutions thus established.

It is now the object of the association to organize the three departments in these institutions, which are to be sustained by endowment, and which aim to qualify woman for her distinctive duties. These are, first, the normal department, where the pupils are to be trained to act as educators; next, the health department, where they are to be trained to be perfectly healthy themselves, and to undertake all that appertains to the care of infancy and of family health; and, lastly, the domestic department, where they are to be trained to understand and perform all the processes of domestic economy.

In 1870, Miss Beecher wrote in the *American Woman's Home* that the American Woman's Education Association aimed to

Establish endowed professional schools, in connection with literary institutions, in which woman's profession should be honored and taught as are the professions of men and where woman should be trained for some self-supporting business. From that effort several institutions of a high literary character have come into existence at the West, but the organization and endowment of the professional schools is still incomplete from many combining impediments, the chief being a want of appreciation of woman's profession and of the science and training which its high and sacred duties require.

Especially striking was the plan outlined for "practice houses" or house laboratories, in connection with the domestic economy departments in the projected professional schools. Miss Beecher describes the plan in the *Educational Reminiscences and Suggestions of 1874* (pp. 158–159). It incorporates an idea which our college departments of Home Economics are now eagerly championing as the next step to-day in methods of instruction, although this quotation shows it was incorporated in the program of the Woman's Education Association half a century ago.

The principals of the domestic department would have the charge of all relating to the aesthetic, social, and domestic, and teach both the science and practice of domestic economy. They would by lectures and books instruct in the fine arts, and superintend classes in needle work and the cutting and fitting, cleansing, and mending of clothing. The supervision of the school and family building would

belong to this department. Each of these departments would be provided with model dwelling houses, illustrating proper and tasteful modes of construction, furniture, ornamentation, warming, and ventilation. The family in each dwelling would consist of the principal, associate principal, and ten pupils, and they would do all family work. A circulating system would employ every member of the family one or two hours daily, in such rotation that in a given time each one will have been instructed in, and will perform, every operation included in family life. When each pupil is thus trained, she will give place to another of the scholars and each would remain a longer or a shorter time according to proficiency acquired at "school or at home."

List of Books by Catherine E. Beecher.

Suggestions on Education (about 1830).

Elements of Mental and Moral Philosophy, Founded on Experience, Reason, and the Bible. (Anonymous.) Hartford, 1831.

The Lyceum Arithmetic: In Three Parts, Each Adapted to Different Ages and Classes. Boston, 1835, pp. 248.

An Essay on the Education of Female Teachers. Van Nostrand and Dwight, 1835, pp. 22.

Letters on the Difficulties of Religion. Hartford, 1836, pp. 350.

Essay on Slavery and Abolitionism with Reference to the Duty of American Females. Philadelphia: H. Perkins, 1837, pp. 151, 2d ed.

A Treatise on Domestic Economy, for the Use of Young Ladies at Home and at School. Boston, 1841. Illus. Plans. Revised with additions, 1842. New York Editions—1842, 1843, 1847, 1849, 1852, 1854, 1867. (Copies in Boston Public Library.) Other editions 1845, 1847, 1855.

Miss Beecher's Domestic Receipt Book, Designed as a Supplement to her Treatise on Domestic Economy. New York, 5th Edition, 1846. First edition, 1842 (?); other editions to 1867 in Boston Public Library.

The Duty of American Women to Their Country. New York, Harper and Brothers, 1845, pp. 164. (New York Public Library.)

American Women: Will You Save Your Country? Published anonymously, 1845.

The Evils Suffered by American Women and American Children: The Causes and the Remedy. Harper and Brothers, 1846, pp. 36.

Truth Stronger than Fiction. New York, 1850.

The True Remedy for the Wrongs of Women. 1851.

Letters to the People on Health and Happiness. New York, 1855. (New York Public Library.)

Physiology and Calisthenics for Schools and Families. Harper and Brothers, 1856, pp. 58.

Common Sense Applied to Religion. 1857.

The American Woman's Home; or Principles of Domestic Science. Catherine E. Beecher and Harriet Beecher Stowe. New York, 1869.

Women's Profession as Mother and Educator with Views in Opposition to Women's Suffrage. 1871.

The New Housekeeper's Manual, Embracing a Revised Edition of the American Woman's Home. Catherine E. Beecher and Harriet Beecher Stowe; together with The Handy Cook Book, by Catherine E. Beecher. New York, 1873, Illus.

Principles of Domestic Economy. By Catherine E. Beecher and Harriet Beecher Stowe. New York, 1873.

Principles of Domestic Science as Applied to the Duties and Pleasures of Home. New York, 1873, pp. 380. (Copy in New York State Library.)

Miss Beecher's Housekeeper and Healthkeeper: Containing 500 Recipes for Economical and Healthful Cookery. New York, 1873. Also, 1874, pp. 482. (Boston Public Library). Also published in England.

Educational Reminiscences and Suggestions. New York: J. B. Ford and Company, 1874, pp. 276. (New York Public Library.)

EDUCATIONAL SUGGESTIONS FROM EUROPEAN LIFE.

EDITH GREER.

Down the ages have come facts and acts informing to all, also power humanly forming. Europe, in an older setting that has endured for centuries, impresses the accomplishment of time more strikingly than do newer environments. Yet the transmigration of human life from other ages and now for America from other nations, is of deep human significance. It teems with educational opportunities, invigorating, suggestive.

The wealth of the past rests not alone in far-famed but distant achievements. It affects somewhat directly the humanity at home in foreign lands. This is disclosed there by those that have followed in time and place. The minor arts are carried in people rather than rest simply in things. Those arts of former days in union with the productive power of earlier peoples, flourish where they arose, often only as incidents in living when no longer living—occupations, the experience in living too rooted as it is, in the past but passing, as it has, into fineness of skill in many European countries, lies open to view to those whom life teaches.

America sees in incoming peoples problems of nation-construction and possibilities of industrial production. "Whose hands if not ours," a foreigner has asked, "are doing the inevitable manual work in the making of America as it now presses forward in material construction, transportation, and industrial productivity?" But America does not avail itself of the accomplishments preserved in the foreigners in her midst nor of the training they have brought which is so fraught with rich resource.

Every child in Europe knits and crochets as do also the working women in their idle hours. All sing and with a musical expressive-

ness unrealized save by peoples of inherited musical sensibility. And who in Europe can be found that cannot cook in superior fashion? Those are but the accomplishments of simple necessary human living through ages of daily life at home.

Nor are these all the powers that come. The fineness of ages of skilled handicraft arrives unseen in the unrecognized silversmith of appreciative power and love for the work left, not to be readily refound. There comes, too, the worker in coarser materials who fashions beauty into simple, useful things that if seen would be sincerely desired.

And is it the wealth of chivalrous tradition which gives the dignity and gentle courtesy that seems to have been bred through centuries of customs suited to peace-giving climes? This rests now as a gift with many to whom fortune seems to have denied much else but not all. A clear mental directness in exigencies of hampered intercourse ever and anon discloses a training of school or life which in itself challenges interest and promises power but often shortly is not to be seen.

Those that are even looked after, are not, in the haste and perplexity over concerns of daily-living, invariably looked at to see what they have in accomplishment, what they are in training, and what they can do through transmitted ability or impress of earlier environment, which America as yet cannot. America often perhaps does not know that what is brought, exists. Those that bring much are frequently not able unreënforced to initiate their power, to adapt it and use it purposefully under changed conditions of life which disguise even the demand there may be for such products or services. Expression thus denied them, they may even bury their inherited strength, regarding it unwelcome because unwelcomed. Not a few that might so enrich life and add charm to living, turn to unskilled labor as it offers, because they must sustain life.

A sign of awakening is seen in the civic vocational bureaus that are now arising to care for the person not less than the product, and beginning to study human possibilities on the background of economic problems. Moulding life to use all the human powers that are, rests with education.

European employment of age in positions of dignity and responsibility, also of women in governing positions with final authority where their experience has qualified them for intelligent service, and the frictionless, flawless corporate action of a group of workers, as in the service of a house as a whole, where everything is seen and what is seen, is done—illustrate human possibilities that American democracy has yet to realize.

The general tendency here, of somewhat unintelligent overvaluation of interested youth, is in danger of resulting in formless activity in the service of no clearly conceived lofty purposes. This, if continued, can but lead, it is believed, to a spoilation of youth which will foster immature unfitness for progressive active responsibility and deplete the ranks of those that should grow wise through the experience that brings mature judgment with mature years.

Youth has promise, but this unfulfilled, it bears fruit in disappointment. One sees childhood with its charm pass with regret, but were it not to pass the regret could but deepen. Growth is the fundamental fact of life and the difference that distinguishes it from all else. This, nations attest which do not suffer arrested development but pass to mature age, of which youth is but the beginning, more than the poets know. Age lost from life, what is not gone? The fineness of youth is its promise, energy, strength. The fineness of maturity is achieving—poise, wisdom. It is not the age that is behind; it is rather the age that is before youth which should direct youth in its effort. It is the ideal that draws onward. The classic but impresses what should not be lost in the forward movement.

Exhausting the worker in early maturity through overmechanical labor, leaving youth undeveloped through overvaluation, overlooking or underseeking the gifts and resources there are, but paves the way for human destitution. Only constructive education, in union with humanized occupation, can avert this.

In the older civilizations, there is more serenity and peace in life as it is lived. There is also appearance of more harmony in domestic and industrial life between belief as expressed and practice as seen, whatever the undercurrents of unrest or suppressed struggle. More of the life of the person is in the living, the daily human living and the occupational living. Everything is not as it is because trade requires that it be. Not infrequently the worker says what he regards the worth of his work. His word stands, though beside his product may stand that of a companion-worker valued far otherwise. The one that wishes the work of both pays in accord with the ideas of each. Is that independence in industry? It was found in union with excellence of workmanship. The small shop with products of its own production, now re-arising in America, one notes with enquiring interest, are foreign in origin.

Here more conflicting aims and efforts stir life and not without somewhat confusing living. America is machine clothed and is becoming

increasingly factory-fed. On the one hand she sits on prison-contract chairs in syndicate built apartments, agent-managed, and on the other is environing her life with nature again as a background, creative expressiveness the builder of home, and appreciative, effective intelligence enlisted in the management of living as it affects human life. Both are. Education will largely determine what is to be.

High inventive capacity none deny to America. But its ingenuity is more commonly used to attract attention commercially than with real human purpose. In Europe interest seems to center in human service. Europe's doors open, its windows close, its locks turn, its shutters latch, its elevators are open and serviceable. The floors of Switzerland and France reflect their housekeeping ideals. The windows of Holland gleam everywhere within its borders on all days and in all weathers. Here there is the will to do; there the will to do well. Interest in work, self-respect in one's occupation, and good results from activity are to be commonly observed everywhere even when the day is divided between cleaning the floors and the silver. What is to be done, is to be well done, housekeeping attests.

Cookery in Europe is better than ours in general combination and variety, also in service. More interest and more intelligence as to food is expressed in its preparation and use. Gardens at hand give freshness to food and naturalness that is lost when all seasons appear alike in production. Everything, from everywhere at all times, promises and provides for variety but also permits continuous close adherence to restricted taste that blunts appetite. It also noticeably results in the practice of selecting, where it can always be found, what minimizes preparation regardless of the dietetic result; if not health-effect. Europe is in practical living nearer to Nature and less apparently fearful of the effort that living requires everywhere of someone.

All Europe also sews well. It conceives clearly of basic construction and is skilled in technique. As it fashions its garments it sees them as art in attire. It is to those garments that are permanent in service that there clings much of the handwork of the past, rich in design expressive of tradition and wrought with hand-cunning too little utilized, if not lost. To the foreigner, the embroidered costume is unseen and may become unvalued because unused. That it has passed from the daily wear of those that toil to the adornment of those that do not, is not fully realized, even if known.

It is the museums, holding what was, which display the things of the life known in other lands. And an impressive lesson it is for the

American to see the treasure houses that store past and passing beauty, thronged on holidays, or fully to appreciate its living significance to those that, though aliens to the land, are wonted to the environment of beauty; as what foreigner is not?

Italy brings to whatever it does, beauty and perfection of workmanship. Its work is deeply informing and singularly satisfying. That of France is good but has not the unswerving practical faithfulness to ideals unaffected by commerce which Italy manifests. The wonder of environment and warmth of human life makes Italy a land of inspiration. Voltaire praising France said, "But none can claim to excel Italy, she has all kinds of gifts to the degree of genius." One realizes with Henry James that "Italy is like an old book; the charm is in the style." It is a land in which by "a noble disregard of the cost of material in the hands of artists, palaces, courts and cities have been created which disclose what can be." Basements and backyards take on new forms in the mind that Italy has equipped to see possibilities. These become two opportunities for beauty to express itself in home and civic life, rather than necessary blights to sight and imagination.

Switzerland serves its 300,000 annual tourist-guests as only Swiss management can and is not disturbed in its domestic or national life. It works with the free play of intelligence which knows no drudgery.

The National Educational Exhibit installed at Berne is, in many respects, a unique protrayal of the educational interests of the nation, the practical phases of its life, such as sewing that living requires be done. This has an integral relation to its education. The pupil-products bear witness to the hand-skill of the nation. Switzerland carries such training with that of the regular school instead of segregating it in special schools as Europe generally does.

The Swiss have unsurpassed ability to train. The current teaching and supervising of servants in their service may be observed without anxiety as to the outcome. The evolution of a waitress, the preparation of a gardener, are characterized by thorough grasp of the work as a whole, mental precision in reaction, kindliness in attitude.

Swiss impress upon international life is more real than is always evident. It does more that is significant to others than care for them as they pass its door. Much of the silk machinery of the world is made there and more and more lovely silk than one is aware, unless seen there. Many of the rarely beautiful semi-precious stones are finding their way into simple, charming form in Swiss hands and passing to a graceful use in costume and minor decoration. The watch-

maker's museum in Geneva displays a craft-power not lost nor forgotten nor unused by the Swiss of today. Their interest in science as it affects life in union with their trained industry and quiet energy of life, with its incorporation of living in education, promises the Swiss an educational effectiveness that springs from intelligent interest in life and returns to direct living progressively.

Throughout Europe special schools are arising to train very practically for commercial, industrial, domestic life. Their activities and methods are practical but their curricula are not so denuded as to restrict signally the human development of the pupil. They include the general work of the traditional school integrated with the practical though apart from their regular school. Their study of language is sometimes even more elastic, as it too is regarded as a probable part of the working equipment required in any occupation that may carry the worker into the current of the heterogeneous life of Europe.

The shops of Italy, seasonal exhibits, and fairs place on sale the handwork of such schools and of the training centers that afford the older women the opportunity to work as their time permits. The work and the workers may be seen and known together. Weaving, embroidery, lace, sewing in all forms, and basketry, are the usual products. These special schools of Italy in Rome, Florence, and Venice are interestingly informing and very accessible simply upon request at the school. The regular schools, however, require all formality.

Children, wherever they are and whoever they are, show much about the life whatever it is. The appreciation of nature of the Swiss child and its singing accompaniment of its outdoor living; the absorbed occupation of the serious, charming Italian child; the alert facility and astonishing obedience of the French child; indicate suggestively the home and school life of the several nations.

The European's comment that Americans are too intelligent to travel as they do, expresses a truth that needs practical consideration. One country seen at all thoughtfully, essentially opens others to view more quickly. If a teacher can travel but six weeks and cannot resist Europe as a whole, then four weeks somewhere and two everywhere, will be more constructive in effect than hurried travel for six. It will even be more generally informing.

Europe presents human life under varied forms that have been brought into interesting contrast through ages of close association yet segregated national living. Knowing life anywhere requires direct intercourse for human effect from it. Passing into touch with a people

and not simply through a country, anyone must ensure who would learn of life as it expresses itself in living.

The esthetic achievements of the ages have their value for humanity in its restful enjoyment of them, through which alone its appreciation grows. Though art must be seen to be realized, to see it, to have seen it, may add to one's information but is not essentially esthetic culture. Deepening pleasure in the presence of the beautiful alone gives this.

One hears and knows that America is not inartistic. Yet it cannot claim such an impress of beauty as not to be able to form itself, in many respects, with utter disregard of the fineness Europe has long presented to its view. An imposing civic square, ennobling and peace-giving to life as it moves through active days, is nowhere lacking save here. This is not always to be but one cannot but wonder how it came to be, since there has been no lack of expenditure here and no lack of illustration elsewhere. Responsive sensitiveness to beauty makes beauty an essential of national life, each nation in turn attests. When one builds at all he is forming the environment of all. Seeing with the leisure to enjoy, impresses the potency of the enjoyment and refines sensibilities that hurried passing but lays waste.

All are aware, that seeing all, anywhere, comes only through responsible living association, whereas travel is in essence irresponsible passing. But it has a service in being such. It enables one to overlook what in living might be overfelt. Alien problems and alien achievements light life differently. How life is lived; what is valued by others in living that differs, and the difference in solution of like life-problems, contribute suggestively to such education as would rest its purpose in effective living and appreciative human development through growth in intelligence.

Schools suited to a like accomplishment under different conditions and for differing social ideals of human advance are opportunities for study, rather copies for execution, if education and living are to have an interworking association, and intelligence and information not be considered apart from humanity in its progress in human living, where and when it is living.

America has known a lower school of German origin but claimed to be of universal application. However it has valued its gifts, it has struggled hard to free itself from being held fast in an environment of the past. Now an Italian school comes to view for little children. Will it be the loveliest of human environments, a court with reposeful

walls and playing fountain which will be brought into American Schools and life from it?

And for how many centuries has America known a Latin High school, to abandon it for what? Is it to be for a German adjustment to German industrial life and social conditions? Is America undergoing a complete educational revolution and from being German below and Latin above is to be Italian below and German above? Is America's intermediate school alone to be American? It is so in origin. It aims to be so in purpose. In it are currently 98 per cent of its children. What America's life will be, is there largely decided. What its living may become, can there be determined. Will it be human, artistic, scientific, intelligently effective throughout, that all humanity may be self-helpful and self-governed and self-cultivated?

THE ELEMENTARY WORK IN PREPARATION OF FOOD IN COLLEGE CLASSES.

The following is a partial report of the round table on elementary work in preparation of food in college classes, which constituted a part of the program of the meeting of the American Home Economics Association held in Washington, December 27–30, 1911. Owing to the illness of the original leader, Miss Abby L. Marlatt of the University of Wisconsin, Miss Isabel Bevier presided. She offered an explanation of the purpose of this round table, in part as follows:

> A good many phases of work in Home Economics have not yet been "tried out." Considerable work has been done with food, less with clothing and dietetics. Some of us have done it in one way and some in another. So it has seemed worth while to consider in these two round tables on the science and art phases of Home Economics various methods that are in actual use by teachers. The particular question to be answered in this round table is, "What seems to you the best way to teach college women, who have had no previous school work with food, to cook?" It is understood that the discussion is limited to elementary work with food and that it may be designated in the college curriculum as laboratory work, experimental cookery, or preparation of food, but it is also understood that the world calls it cooking.

The first paper, which follows, was presented by Miss May B. Van Arsdale of Teachers College.

WORK IN TEACHERS COLLEGE CLASSES.

MAY B. VAN ARSDALE.

Since this paper embodies the conclusions drawn from several discussions among the faculty of the department of foods and cookery, Teachers College, I take pleasure in presenting it for the department.

In preparing the paper it has been assumed that this discussion was not intended to take the form of a plea for the introduction of courses in food preparation into colleges where such courses do not now form a part of the curriculum, but is intended to present the specific method now employed in certain institutions already giving courses in practical cookery.

So much for the meaning of the term "college classes" in our title. It will be well also for us to consider whether we are in agreement regarding the meaning of the term "elementary food preparation."

We understand the term "elementary" work to cover all courses which aim to develop a knowledge of the general underlying principles of cooking various food materials. By advanced work is not here meant simply the making of the more elaborate dishes where skill and an artistic result are the chief ends sought, neither do we refer to an investigation of certain problems which may be classed as research work. By advanced as distinguished from elementary work we mean all such courses as are formulated with a specialized end in view on the basis of a knowledge of the general principles of cookery—such as courses in home and invalid cookery, large quantity cookery for different types of institutions, cookery for infants and children, camp cookery, etc., all of which courses may be more effectively accomplished on the basis of the work in general principles.

Teachers College cannot be said to have any one method for teaching this elementary food preparation. The presentation of the subject matter is necessarily more or less adapted to the needs of the various types of students. In general, however, the method may be stated thus: The course called Household Arts 30—Elementary Food Preparation—is intended to introduce the student to a formal study of food preparation by systematizing the knowledge of cookery already possessed by the student—to develop reasons for processes already familiar, such reasons being drawn from practical experience and from courses in chemistry and in foods being pursued at the same time with the work in cookery. The fundamental principles are developed by a study of general proportions in combining food materials as well as from the study of a specific recipe in the endeavor to establish a rational basis for the later use of the more formal recipe in future work.

The next course makes the connection between the "reason why" and the actual cooking process more directly, being based upon the performance of experiments in physical science along with the study of a variety of recipes for the same product. The results of the various recipes are compared, the reasons for variations discussed in the light of experiments performed either in the cookery laboratory or in other courses being pursued at the same time, to discover the essentials and the non-essentials, the relative economy, or the comparative palatability.

In the more advanced work—that is, in the courses in home and institutional cookery, demonstration cookery, catering, and other courses with a more specialized aim in view, skill in combining materials and the production of a good result are the chief aims. Not too many failures are sacrificed to experimentation in this work, for the ability to adapt the knowledge already gained to the specific end sought is the avowed aim of this later work.

Perhaps all of the above may be best summed up in a statement volunteered by a professor outside the department in cookery whose familiarity with the work in cookery is gained chiefly through the students who pursue sequent courses under him. He says:

> Cookery is taught at Teachers College by the same general method which has been found best in the teaching of analytical or experimental chemistry. The student is given directions which are made as suggestive as possible to provoke thought and to encourage individual experimentation, but which at the same time are sufficiently definite to prevent blind floundering and useless waste of time. "Skill and a good product" are sought (just as skill and an accurate result are sought in quantitative analysis) but not at the expense of a knowledge of the "reason why."

But any method of presentation fails to yield the very best results in practical cookery if the student is hampered through all her work by a deficiency in the technique of the subject; or if she has to mark time, as it were, in the cookery process to obtain this necessary knowledge. She is like a builder, endeavoring to construct a house before he is skilled in the use of the implements with which he builds.

We feel that in the future a course in the technology of the subject will be a desirable introduction to all work in practical cookery. Such a course will aim to produce skill in the mechanics of cookery, to familiarize the student with the general principles of science underlying the various processes, and to acquaint her with various types of stoves and fuels by a quantitative study of them. Such a course will aim to present to the students various mechanical devices used in the subject and to teach the adaptability of utensils to specific uses. It will lay special stress on the study of weights and measures (as well as on weights of measures) and thermometry. It will also aim to dignify the mechanics of the cookery processes like dish-washing and scouring. It will aim to acquaint the student with the appearance of food as purchased while emphasizing the economic aspect. We believe that a student thus equipped will be better able to concentrate on the food preparation itself when she takes up the practical cookery instead of being distracted by the mechanics of the subject, so that all along the

line better results may be yielded whether the student is to be a housekeeper, a teacher, or a specialist in any field.

For, after all, we are all striving to produce effective individuals and in so far as the work in elementary food preparation or in any other subject fails to be of advantage to the individual as an individual it fails to produce an efficient housekeeper or teacher.

Then followed a paper by Miss Catharine Mulligan of the University of Tennessee.

WORK IN THE UNIVERSITY OF TENNESSEE.

CATHARINE A. MULLIGAN.

The problem for the teacher in the South to solve is the same that meets the teachers in other parts of the country, but there are circumstances that make her problem a little bit different from the others.

Our grandmothers were familiar with all the details of household management; they trained any number of servants to perform the immense amount of work necessary to feed, clothe, and keep well and in working trim the large families in the "big house" and the "quarters," as well. These servants—our black Mammies and Uncle Romeos—are for the most part gone, and we are dealing in the South with a servant problem—not the immigrant, but a shifting, shiftless generation of children of a people who thought that freedom from slavery meant freedom from work, and whom educational leaders are training to work for themselves and not for the white people.

Now, since the household tasks have always been performed by negroes, the Home Economics teacher had at first to interest the school boards and the students in subjects entirely new to their thought and practice. There are no richly endowed colleges in the South, except a few negro schools, and school boards have to make a little go a long way. So, until recently, only normal and industrial schools have made room for domestic science and art, but now many high schools and colleges, and even a second university—Texas—has joined Tennessee in offering Home Economics courses for its women students.

With this demand, southern women have begun to prepare themselves to teach household science in our own part of the country, where we use buttermilk and soda to lighten our biscuit, where we eat gravy on our rice and hominy, and where we make corn-bread of *white* corn meal and without sugar.

The men at the University of Tennessee are required to take military drill during their first two years in college, and the women prepare for peace by filling those hours of their schedules with Home Economics—sewing in the Freshman year, and a beginner's course in cookery in the Sophomore year, where the chemistry begins. Those who wish may choose a second year of cookery from the open electives in the Junior year, and the Seniors may elect a term's work in house construction and household management, and a term in review of the whole subject of Home Economics, with reference to teaching it in high schools. We are hoping for the opportunity to do practice teaching under the supervision of the department of education.

Though the work was originally planned for girls who elect the courses as a part of their training for home life, yet students come to us in increasing numbers who expect to teach in high schools, in mountain mission schools, in orphanages, in settlements, in factory towns among mill operatives. In some of these places the position means being housekeeper and teacher both, and the only classes are groups of girls who have to prepare the three meals a day for the whole school.

The department at the university consists of two teachers and one student assistant, so the needs of all these students must be met in a very few classes. These classes meet for two laboratory periods and one recitation each week. They work from typewritten directions, which we add to and make changes in each year as conditions change. It seems a waste of time and material, too, for students to work without some guide, nor do they get any real practice from such small quantities as are printed in a recently published school text-book, where one tablespoonful of flour is the amount used in a cake.

Snyder's *Human Foods* is the text-book for our sophomores, and they begin with the practical work in cookery of starch—the cereals rice and hominy being the dishes most often found on our Southern menus. Usually the students work in groups of two, and three different recipes are prepared by the class of 14 or 16, so we have several duplicates of each recipe—quite enough to see that originality in the finished recipe is attained, even with the directions before the class.

The Sophomores progress from cereals to quick breads; then sugar; eggs, oysters, etc.; deep fat frying; with vegetables for their last spring work. Some study of serving of meals is made, and a simple meal served, cost estimated, and food value calculated by the 100-calorie portion table.

The Juniors use Sherman's *Chemistry of Food* as their text-book,

together with numerous references to other books, and to government publications. They count the cost of each lesson in materials used, time consumed, and gas used. Just now they are aiming to become more efficient by saving steps and motions, by coöperation in group work, and by planning ahead.

These classes began their practical work last fall with canning and preserving. Consulting their grocers, they found what fruits and vegetables they could profitably put up in the home and what would be economical to buy already canned. They judged their bread by the score card Miss Bevier has printed in her text-book. The meat lessons come next, and they are keenly interested in paper bag cookery, having experimented these last few days with steak pan-broiled, broiled under the flame, and cooked in the paper bags. As these Juniors meet me for the two hours preceding lunch, they will, after mid-term examinations, serve lunch for four persons, working in groups of two, till all have prepared a meal, calculating cost in time and materials, and estimating the nutritive value.

With the few hours at our disposal, there is yet in our colleges time for only a general course in Home Economics, leaving to the schools more heavily endowed the carrying on of research work along particular lines.

So far our students at the university have not stopped with the four years' work given there, but are continuing their studies in both summer and winter sessions and taking work at Columbia, at Simmons, and at other places as well.

The next paper was by Mrs. Mary Pierce Van Zile of the Kansas Agricultural College.

ELEMENTARY COOKERY.

MARY P. VAN ZILE.

At the present time relatively few students who are entering our colleges have had a chance to study cookery, consequently it is of importance that they have the opportunity of beginning this subject in college. It is therefore desirable for college courses in Home Economics to include a course in elementary cookery for all students who have not had the advantage of such training in secondary schools. For those who have had such training, a somewhat different method of procedure is necessary, and so long as the training of the students who

enter college is so widely different, the problem of adjusting the college work to suit the needs of the individual is not easy to solve. It necessitates offering courses for those who desire to begin the subject, and at the same time to offer suitable courses for those who had such training in the secondary schools. In this paper it is my purpose to outline the method and scope of the course for the student who is the beginner.

The course in elementary cookery should be a part of the Freshman year's work. The student enters college and enrolls in the Home Economics course expecting to have courses in cookery and oftentimes in sewing. If these are not offered her, but she is assigned to chemistry, physics, etc., she becomes discouraged. The elementary cookery course may be the means of holding her interest until such time as she learns to recognize in the science courses the necessary tools in the accomplishment of some definite purpose. I would by all means give her the science, but while she is taking it I would also offer the elementary course in cookery.

Many educators believe that the teaching of science can best be accomplished by presenting the subject in a concrete form and then making the analysis afterward. The elementary cookery course offers opportunity for such a development of the subject. The student's interest may be aroused in the cooking lesson—the understanding of the underlying principles will follow. If properly presented, the cooking lessons are the best preparation for the study of chemistry, of physics, or of botany, for the student very soon learns that these subjects are vitally connected with the real things of life. This course in colleges should take into consideration the maturity and broader general knowledge of the college student and therefore should be different from the high school course. The student should be required to proceed more rapidly, and to do things more thoroughly and intelligently.

Occasionally the argument is met that the college should not be required to teach the art of either cooking or sewing—that these things should be taught in the secondary schools. In theory the plan may be good, but in practice it is all wrong, for very few of the students who enter college will have had the practice. It is quite absurd to graduate a young woman from a Home Economics course who is not master of all the details of cooking. Therefore I believe the elementary course should give ample opportunity for the student to become familiar with cooking as an art. I would not, however, minimize the importance of good sound theoretical training. It is quite as necessary to develop

keen and accurate analysis of every subject considered, and the whys and wherefores should be made an important part of every lesson. It is the combination of the doing and the knowing that gives the ideal course.

The length of such a course must be determined by factors which are so local in character as to make it impracticable to discuss it at length here. It may be said that in general where the Home Economics work is offered, the course as a whole is based upon a certain division of the different phases of work—for example, approximately one-third of the student's time is given to the fundamental science work; one-third to the so-called cultural studies, English, history, German, French, etc.; and the remaining one-third to the technical work of the course. This technical work must include the sewing, cookery, and such drawing courses as are fundamental to the art and design courses which come later. At best the time that can be given to the elementary cookery course is limited. I have found that twenty-four lessons of two periods of sixty minutes each make a satisfactory course.

Whatever the length of time allowed, it is imperative that the course be well planned and logically developed. There is a justifiable difference of opinion as to the best order of development of the subject, but whatever the particular order of development adopted, it is imperative that every teacher be able to justify her method of procedure. The time is past when any course in cookery that is not carefully planned and logically developed can become a permanent factor in any college curriculum.

In teaching these elementary courses the teacher must be careful to remember the limitations and experiences of her pupils. For often the senior university viewpoint is the one the teacher has and as a result she fails as a teacher of the elementary courses. It requires skill to adapt her knowledge and to present it in a simple way. The teaching must be scientific—it must give knowledge of principles of cookery—it must inspire interest—and yet with all it must be so simple that every student will fully comprehend.

A few of the results to be attained by the elementary cookery course may be summarized as follows:

(1) It encourages the idea that there is something worth while in performance of the daily tasks of life.

(2) It furnishes an incentive for good work in other subjects of the curriculum.

(3) It gives excellent training in construction work.

(4) It gives knowledge of elementary science and lays foundations for more exhaustive scientific studies.

(5) It is a fitting introduction to the more advanced food courses.

Miss Jenny H. Snow, University of Chicago, spoke in part as follows:

I will try to give you a little idea of what we as a department stand for. The study of food and its preparation go along hand in hand. There are three lectures and two laboratory periods a week. The object of the work is to make the girls as independent as possible, not only through a knowledge of the materials they are handling and of the effect of heat upon them, but of proportions and methods of combination that they have worked out as far as possible by experiments. This is the general line of work. The science work that has a direct bearing on the preparation of the food itself precedes the preparation of that food. The time devoted to this elementary work is two quarters of twelve weeks each. These courses are supposed to give the girls a general knowledge of all the elementary food preparation.

PRESIDENT BEVIER: Does this mean that these girls have never had work before, or do they come to you from the high school?

MISS SNOW: Most of them have not had work in the high school but many have had practical household experience. Next year we are planning a course that will take less time for the girls who have had some work in our own and other high schools.

Miss Agnes Hunt, Michigan Agricultural College, was asked to give her viewpoint and responded as follows:

The conditions that we have in Michigan are different, of course, from those in Illinois. We have for example, a group known as sub-freshmen, as do, I think a good many other institutions. In this course we try to present elements of cooking, pure and simple, and the practical handling of utensils and of food materials. All of our girls, however, do not come as sub-freshmen, and the sub-freshman class is gradually diminishing. We hope sometime to abolish it entirely, but at present we have these conditions to meet.

The college work in cooking comes in the Freshman and Sophomore years, and we change our point of view entirely from that in the sub-freshmen year. We take certain principles which we have borrowed from chemistry, from physics, from bacteriology, and by following certain recipes work out these principles. We start in with measurements and have more or less definite work on heat in one or two lessons

in order to determine something of the use of the thermometer. Then we take water as a carrier of flavors, later milk, following up with protein, taking milk as a sample form, then eggs and meat, and later carbohydrates.

You see our system of taking up food elements varies from some of the other work which has been presented here. I recall very vividly one of Dean Kinley's statements on what he called the "effective utility of foods." This he divided into four headings. Selection and preparation of foods was one of the factors which made up the absolute effective utility of foods. The next was the physiological value of food, that is its heat and energy giving value; the next its psychological value; and the last its aesthetic value. So we have others besides these purely scientific principles which we might have embodied in the selection and preparation and the physiological point of view; we have also tried to carry in mind aesthetic considerations. This seems a large field of work to cover in a few hours, but I think if one has these points in mind one can bring them out very effectively.

The plan for the elementary work in Pratt Institute was presented by Miss Ruth Atwater, as follows:

Our aim in the Junior cookery of which I am to speak particularly is to give the foundation material for the general cookery, both in theory and in practice. The time allowed is five periods a week, two laboratory periods of ninety minutes' duration, and one lecture period of forty-five minutes' duration. In the spring term the time is extended; it includes one laboratory class of four periods consecutively beside the ninety-minute laboratory class and the lecture. This extension of time is given to allow the students to put into practice during the winter term their work in serving.

In addition to the work in cookery there is a course in marketing and theoretical serving which occupies two periods a week. Then in the extension of time in the spring term the student is given an opportunity to prepare food in large quantities, and type meals are served for twenty people. We find that this is a great advantage to the students. They get experience in group work and in large-quantity cooking which develops judgment, facility in handling material, and adaptability under varying conditions. This we strive very earnestly to do in this first year's work.

Particular emphasis is placed in the Junior work on the theoretical side of the subject, and to this end the chemistry, which is advanced

inorganic, lends very valuable aid. In the chemical laboratory the students examine various baking powders, carbohydrates with regard to their property of hydrolysis, and later in the year they test foods for their inorganic adulterations.

There is in the Junior cookery no experimental cookery as such. That is, the students have no undirected research work; all of their experimental work is directed, and of course serves to illustrate the general principles. We examine the food principles with regard to their composition, food value, and digestibility; we take up the subject of digestion carefully, and of course consideration is given to that in the physiological laboratory as well. We consider the effects of heat and the methods of application. We also consider the effects of cold, both above and below the freezing point, so that we teach the work in physics in a very practical way.

As a result of our Junior training, we wish to find developed in the student a knowledge of the underlying physical and chemical properties of food, including a careful study of the food principles from both a theoretical and applied standpoint. Also we consider the effect of various enzym and bacterial actions, both singly and in combination. We further wish to find the students able to handle food materials, drawing upon their general knowledge of underlying principles and general properties which they themselves have evolved from the various laboratory exercises throughout the year.

We hope to enter our students in their second year's work with minds trained along scientific lines, for we lay open to them the path of independent work through some undirected research work in various subjects, and we also give them directed reference work with regard to government publications and the standard authorities. Then we hope as well to find at the completion of this first year's work in general cookery facility in handling materials developed together with a mind trained to think independently and along scientific lines.

The plan for the advanced work in Pratt Institute was presented by Miss Jessie A. Long. Miss Bevier then read a statement giving the aim and scope of the elementary work as carried on in the University of Illinois:

The purpose of the course in selection and preparation of food offered in the University of Illinois is to give the student a fundamental grasp of two phases of the food problem. It is recognized that most of the interest in food centers about the finished product, the perfectly cooked

and well flavored dish, but something more than technique and taste must be embodied in any work before it is deserving of the attention of university students. Therefore the sciences are put under tribute in so far as the working of any of their laws is to be demonstrated as operating in the success (or failure) of the work with food.

Take for example the simple law of diffusion of heat, *i.e.*, the tendency of heat to expend its energy in all directions. Once the student has mastered this principle she is ready to make use of it at any point where it may apply. She may proceed according to this law in one case by providing a supply of heat to her sauce pan to make up for the constant loss; she may impede its action by inclosing the heated vessel in a covering of non-conducting material; she may modify its workings again by interposing a like material between the summer heat and her ice-box; or she may call its most striking action to her aid in the freezing of desserts. In like manner chemistry, physiology, bacteriology, economics, and esthetics, are made to contribute to an understanding of the work.

In the laboratory preliminary experiments showing this scientific basis for the treatment of foods are given, followed by definite directions for the preparation of successful dishes on the basis laid down.

It is expected that criticism of this last statement will be met with from those who favor the plan of leading the student to develop her own recipes from the principles mastered. But it is believed that recipes have a useful and legitimate place as aids in the successful preparation of food, and that, in so far as the work here is concerned the slight educational value of this method is not to be considered in comparison with the saving of time of busy university students. It is expected, however, that the class will develop a certain amount of judgment in regard to recipes and to the product likely to result from their use. In other words, some analysis of recipes as such is insisted upon.

The idea is constantly emphasized that while there is apparently an endless array of both food materials and of methods for their manipulation, there is underneath all this a very simple and orderly foundation of scientific laws, and that with this foundation as a basis it is possible to get a true perspective of selection and preparation of food amidst all accidents of circumstance.

In closing the discussion, President Bevier called attention to the fact that it had been quite clearly shown that however the methods

might differ there had been very general agreement that the final result should be food in an attractive and appetizing form. She also expressed the belief that good results in cooking were secured only by working in accordance with the laws of science, and that much scientific work with food had been done by people quite ignorant of science as such. For example, the woman who makes bread successfully, though she considers herself quite ignorant of bacteriology, does understand very well that she must not "scald the yeast."

The *Bread Book* gives some three hundred recipes, by following which good bread may be obtained *provided* certain fundamental principles about temperature, time, and due care in manipulation are exercised. It would appear from these papers that there are many methods of teaching people to obtain good results in cooking, *provided* also certain fundamental principles are not violated.

A CAFETERIA FOR COLLEGE STUDENTS.[1]

MARY ELLIOTT ARNOLD.

Cornell University.

In planning a cafeteria for college students we had four aims: (1) To serve attractive, homelike food; (2) to provide well-balanced and nutritious meals; (3) to sell them cheap enough to enable the poorer students to buy; and (4) above all to make the experiment pay. The last two items were, of course, the greatest problem. The cafeteria method of serving was decided on as reducing service to a minimum. Laundry bills were cut to a minimum by the use of paper napkins. The unit of two hundred was found advantageous because a simple equipment with a moderate investment of capital requires but little expenditure for interest. The only unnecessary expense allowed was in the decorations and china, both of which were made dainty and attractive.

With these a moderate rent, small interest because of the modest investment, and minimum amount for wages, it was possible to put what money came in where it was essential, namely, into the food itself, and butter, milk, eggs, and cream were used as freely as was practicable in the cooking.

There proved to be another advantage to the two hundred unit. Instead of employing the hotel or institutional chef, the cooking could be done by women and these women could be trained by the managers themselves and so carry out the ideals of the place.

In planning the menus, the work done by the department of Home Economics of the University proved of the greatest practical assistance. Meat is an expensive form of protein and to bring down the cost of the meals it was decided to use meat substitutes, such as cheese, nuts, legumes, etc., as well as the standard lamb, pork, and beef. We give below two price lists showing the advantage in price of substituting other forms of protein for meat in part of the meals:

[1] Presented at the Washington Meeting of the American Home Economics Association, December, 1911.

MEALS OF AVERAGE STUDENT (1).

Breakfast: Cereal, 5¢; coffee, 5¢; roll and butter, 2¢	$0.12
Dinner: Meat, 15¢; potatoes, 3¢; soup or vegetable, 5¢; dessert, 5¢; bread and butter, 2¢	.30
Supper: Meat, 10¢; vegetable, 5¢; salad or sweet, 5¢; tea, milk, or cocoa, 5¢; bread and butter, 2¢	.27
Total	$0.69

This is $4.83 a week—too costly a rate for a large number of the students.

MEALS OF AVERAGE STUDENT (2).

Breakfast: Cereal, 5¢; roll and butter, 2¢ (coffee is omitted)	$0.07
Dinner: Meat substitute, 5¢; vegetable or soup, 5¢; potatoes, 3¢; dessert, 5¢; bread and butter, 2¢	.20
Supper: Meat substitute, 5¢; vegetable, 5¢; salad or sweet, 5¢; tea, milk, or cocoa, 5¢; bread and butter, 2¢	.22
Total	$0.49

This gives a total for the week of $3.29, a saving of $1.54 over price list No. 1, with no loss of energy value.

Meat and a meat substitute are served side by side on the counter, and though not all the students take scientific feeding quite seriously a percentage of them are genuinely interested. By January of the first year one-half the students took the meat substitute and when the college closed in June several reported that they had come through the entire year in excellent physical condition on from $2.24 to $2.80 a week. Only very simple menus are served, though we try to vary the food from meal to meal. Sample menus are given below:

Dinner.

Swedish Onion Soup	$0.05
Roast Beef	.15
Walnut Loaf with Tomato Sauce (meat substitute)	.05
Creamed Carrots	.05
Baked Potatoes	.03
Cousin Mary's Muffins	.01
Caramel Cream	.05
Nantucket Pudding	.05
Coffee, Tea, Milk, Cocoa	.05
Bread, 2 slices	.01
Butter	.01
Cream	.03

Dinner.

Mexican Bean Soup	$.05
Roast Pork and Apple Sauce	.15
Cheese Pudding (meat substitute)	.05
Fried Parsnips	.05
Boiled Jacket Potatoes	.03
Corn Muffins	.01
Washington Pie	.05
Cornell Pudding	.05
Coffee, etc.	

Supper.		*Supper.*	
Hungarian Moufa	$0.10	Mexican Stew	$0.10
Peanut Croquettes (meat substitute)	.05	Lentils (meat substitute)	.05
Creamed Cabbage	.05	Leipsiger Allerlei	.05
Emma's Potatoes	.05	Fried Potatoes	.05
Banana Salad	.05	Primaverd Salad	.05
*Baked Apple	.05	Baked Apple	.05
Hot Rolls	.01	Hot Rolls	.01
Coffee, etc		Coffee, etc.	

*Baked apples are served every night by request.

Granting good cooking and arithmetic as the two most important factors of an eating place, the psychology of feeding certainly comes next on the list. Why does the public like this and not that? Why for instance do people always take the first pudding on leaving the steam table, so that it is wise to place the least popular one there? Why when exactly the same menu was served in a large college dining room and at the cafeteria did complaints follow in the one case and praises in the other? Why, to take a common instance, do people prefer to go where there is a crowd? These are superficial instances, but other questions strike deeper. Attractive surroundings, a pleasant atmosphere, and social intercourse make as great an appeal as wholesome and appetizing cooking. There are laws of attraction and repulsion that must be studied before the problem of public feeding is to be solved. As one of the students said in speaking of two eating places "when I go to a 'dog' (a cheap restaurant) I feel like a dog and when I go to —'s I feel like a gentleman."

THE LUNCH BASKET PROBLEM.[1]

AGNES HUNT.

Michigan State Agricultural College.

There are four common ways of carrying a lunch: (1) By means of a tin pail; (2) by means of a pasteboard or papier-maché box; (3) in a collapsible lunch box; and (4) in paper bags or wrapping paper. We experimented on the first three of these.

By comparison we find that the tin pail keeps the articles of food in the best condition, although it retains the odors and distributes them through the different articles. The pasteboard or maché box ranks second in keeping the food moist and it allows the odors to escape somewhat. The collapsible box allows the food to dry out more than either of the others and, although it is of course more conveniently carried home at the end of the day, it is in reality the least satisfactory. On the whole, the tin pail seems the most desirable. Of course, a regular dinner pail, manufactured in sections, is more expensive in the beginning, the cost being 25 cents while that of the others is only 10 and 15, but it pays for itself in the long run when you consider that it is practically indestructible and may be kept sweet and clean under the purifying influence of boiling water.

Much of the attractiveness of a lunch depends upon the manner of packing. System and order, together with neatness and calculation, are necessary in order to prepare properly an inviting lunch. The first thing, of course, is to be sure that the lunch box or basket is absolutely clean. Line it every time it is used with fresh paper. For this, oiled paper is best and is really very inexpensive, a dime's worth being enough to last a month or more for this purpose, and to wrap sandwiches. Wrap each article of food separately and place in the box neatly, putting those to be used last, in the bottom, unless they are easily crushed. In that case, put those articles where they will be hurt the least. It is surprising what may be carried by means of a covered glass or one with a screw top—a baked apple or other wholesome sauce, syrup, or honey. If fresh grapes are to be put in, they may be spared crushing by the use of such a glass. Salads and baked beans may also be carried in this manner. If sanitary drinking foun-

[1] Presented at the Washington Meeting of the American Home Economics Association, December, 1911. The experiments reported were carried on by Alice E. Jeffery and Elizabeth M. Palm, Seniors in the Home Economics course at the Michigan State Agricultural College in 1911.

tains are not accessible to the lunch carrier, a sanitary collapsible drinking cup is a wise addition to the basket and takes up only a little space. After the lunch is all packed, lay a neatly folded paper napkin on top.

Using the cost as a basis we worked out several menus for lunches and were surprised to find what a satisfactory lunch could be prepared for from eight to ten cents; and from the standpoint of variety and suitability we found that the material at hand was abundant. We prepared three lunches, which conformed as nearly as we could calculate to the required calorific food value, for which we used a combination of the Voit, Atwater and Benedict, and Chittenden standards.

LUNCH NO. 1. FOR A MAN AT SEVERE MUSCULAR WORK.

Calories required = 1015.

Four ham sandwiches	635
Two molasses cookies	228
One piece cheese (20 grams.)	78
One orange (½ lb.)	85
Total calories	1026

LUNCH NO. 2. FOR A MAN AT MODERATE WORK.

Calories required = 756.

Three cheese sandwiches	477
One boiled egg	85
One molasses cookie	114
One orange	85
Two pieces celery	3
Total calories	764

LUNCH NO. 3. FOR A WOMAN OR CHILD AT MODERATE WORK.

Calories required = 606.

Three celery sandwiches	384
One boiled egg	85
One cookie	114
One apple	30
Total calories	613

For a growing child we have assumed the same number of calories as is required by a woman in moderate work, 606 calories. The average lunch will mount up to a much higher calorific food value than this

—a lunch, for example, which contains three or four meat or cheese sandwiches, cookies, cake, pie, etc.

Sandwiches form the foundation for so many lunches and furnish variety to such an extent that the following outline has been worked out. Sandwiches may be classed according to the kind of bread used, each kind having certain fillings especially suited to it:

I. White bread.
   (a) Meat—Plain or chopped and mixed with salad dressing for variety. By actual experiment we have found that meat chopped and mixed with dressing will go twice as far as plain sliced meat.
   (b) Egg—Of course there are numerous ways of preparing these. We tried three kinds: (1) Plain sliced hard boiled egg; (2) chopped egg with salad dressing; (3) chopped egg with cream sauce. Of these three we like the plain sliced egg the best.
   (c) Salad sandwiches—This idea is somewhat new, but we have found that delicious sandwiches may be made from almost any kind of fresh vegetables chopped and mixed with salad dressing. Of these we made (1) lettuce, and (2) celery.
   (d) Relish sandwiches—These consist of olives, pickles, or pimentos, chopped and mixed with dressing if desired. They are very satisfactory.
   (e) American cheese, plain or mixed with dressing—Of course these are not so new but they are very good and nutritious.

II. Boston brown bread—This may include (a) cream cheese; (b) chopped nuts; and (c) Dutch cheese.

III. Rye bread—This may include (a) cheese; and (b) spiced meat.

IV. Fancy sandwiches—These form a class by themselves. They are usually made with white bread and include (a) jelly; (b) orange marmalade; (c) nuts; and (d) dates or figs. These are commonly called "sweet sandwiches" and are best used when no cake is to be had. Meat sliced thin and packed in a neat little package is nice to put in to be eaten with them.

We have computed the value of some of these sandwiches as follows: (1) Two celery sandwiches weighing 79 grams give a calorific value of 253; (2) two ham sandwiches weighing 90 grams give a calorific value

of 318, as do also (3) two cheese sandwiches weighing 85 grams; (4) two egg sandwiches (plain) weighing 119 grams give a calorific value of 335. The rest of the lunch, as previously stated, must be made to correspond to these calorific values.

The next articles to be considered are the cakes and cookies. Rich cakes must always be avoided as well as those which crush. A layer cake is out of the question, but the following may be used very nicely: (1) Gingerbread cut in neat squares, which may or may not be frosted; (2) sugar cookies; (3) drop cakes, which are very easily and quickly made, and which furnish variety; (4) strips of cake with plain frosting; (5) ginger snaps and molasses cookies; and (6) little sponge and spice cakes. In regard to the keeping qualities of these we found that the cup cakes and soft cookies were best and more desirable for the lunch.

We next studied the matter of relishes. These add little if any to the calorific value, but they do add to the flavor and general attractiveness of the lunch. Radishes, olives, small pickles, or celery may be used, but a small quantity is all that is desired, as for instance, three olives or two pickles.

Fruit should always be used in season. A ripe but solid peach, pear, or apple is always pleasing. Grapes may be carried in a covered glass to keep them from crushing. Bananas are too hearty on top of the average lunch. One might add a tightly covered glass containing apple sauce, prunes, a baked apple or pear, a baked custard, a canned peach, or jam. These are best used when fresh fruit is not available and should be eaten with plain bread and butter sandwiches.

Confections are desirable if few other sweets have been put into the lunch, but only the pure maple sugar or home-made fudge or molasses candy should be used.

The conclusions we would draw are these:

(1) The average lunch is too heavy.

(2) The quantity of food used may be suited to the needs of the eater in a "put-up" lunch as well as in a hot dinner.

(3) A large variety of food is obtainable which is very suitable for the needs of the lunch basket.

(4) A tin pail furnishes the best means by which to carry a lunch.

(5) Planning is needed in the preparation of a lunch.

(6) There is no excuse for a lunch looking anything but neat, and that it may, on the other hand, be a "work of art."

HIGH SCHOOL LUNCHEONS IN PHILADELPHIA.[1]

EMMA SMEDLEY.
Superintendent of Lunch Rooms.

School luncheons in Philadelphia began as an experiment in the William Penn High School for Girls, which accommodates about eighteen hundred pupils. At the opening of the following school year, September, 1910, the Board of Public Education expressed its approval of the work of the previous year, by extending the luncheon scheme to include the large Manual Training High School for Boys.

At present the lunch rooms are under the supervision of a person appointed by a committee of the Board of Public Education. She is authorized to engage all assistants necessary to conduct a lunch room which shall furnish to the pupils and teachers wholesome, nutritious food at net cost; to purchase all food supplies and arrange the selling price in accordance with the original cost, so that all expenses of service and food will be met by the luncheon receipts; and to pay all bills after they have been approved by a committee appointed from the faculty of the school.

The director of luncheons meets the individual problems of each school through the principal, or through the faculty committee. When opening a new lunch room, the director meets the pupils and teachers in their morning assembly and talks to them of the value of a wholesome luncheon, and the plan to be followed in the present system. She explains how the luncheon will be managed on the coöperative plan—the Board of Education furnishing the equipment, while the food is purchased at the best wholesale prices and served at a price that will be sufficient to cover the cost of the food and service. The heart of a boy is reached when he feels that he is given a "square deal," and these boys are at once enthusiastic over the plan, and are eager to be of assistance in the lunch room.

In each of the seven schools at present included in the system there is a competent person, a graduate in domestic science or one trained by her, who is responsible for the carrying out of all plans made by the superintendent; the details of food preparation and serving, keeping a record of stock on hand, selling luncheon checks to the students, and making bank deposits. She reports each day by telephone or in person to the office of the superintendent.

[1] Presented at the Washington Meeting of the American Home Economics Association, December, 1911.

The number of helpers is arranged according to the need in each school. With an enrollment of about 4000 children and about 200 teachers, we employ 29 women, 1 man, and 50 student aids. Seven of the women are employed only three hours each day, one woman gives half of her time to the duties of cashier in one of the large schools, and the other half to the bookkeeping and stock records for *all* of the schools.

In addition, pupils are engaged as helpers. These pupil aids are supervised by a class representative; they serve in turn; and they show a business attitude to their work. They are paid ten cents a day.

It was with some trepidation that we ventured to serve food to the high school students, for the traditional high school luncheon consisted of pastry, cream puffs, crullers, and a great variety of cakes and candies. Our plan is to exclude all of these from the menu and to furnish simple, plain foods, from which may be selected a substantial mid-day meal; soup, meat, substantial vegetables, cocoa, and home-made desserts.

At first the boys did not take willingly to our bill of fare, and we had to coax them to try the new kinds of plain substantial foods in place of the customary pastry and cakes. This was done by means of printed signs in the form of rhymes, tacked up in conspicuous places about the room. We see many evidences that their ideas have changed. Recently one of the boys said, "We boys didn't like your place at first, but I don't think there's many fellows could eat the other stuff now; and another boy remarked, "We boys certainly do respect the lunch room."

A few days ago one of my assistants met a graduate of last year, now in business, who said that he used to think he realized the excellence of our lunch, but he never had appreciated it so much as now when he is going from one restaurant to another in search of something attractive and palatable that will come within the reach of his purse.

To quote from a recent report sent to the Board of Education by the principal of one of our large schools:

> We have now had enough experience with the coöperative lunch room to justify our reporting it to be an entire success. Our pupils are furnished with wholesome food at prices varying from one-fourth to three-fourths the charge at good restaurants. For example, each day's menu includes one solid dish, usually a meat and a roll, for 5 cents, a large cup of cocoa with whipped cream for 3 cents, and excellent meat sandwiches for 3 cents. At first very many of the pupils brought lunches from home, but gradually they have come to see that it is not only more convenient

but also more economical to patronize the lunch counter. The lunch plant is entirely self-sustaining, and as the profits have grown, the portions of food have been increased and the price reduced.

The daily menu also includes soup and a roll 5 cents, pudding for 3 cents, ice cream 5 cents, milk 3 cents per glass, fresh fruits varying in price according to the season, dried figs and dates in 2 cent packages wrapped in paraffin paper, sweet chocolate in 1 cent, 3 cent and 5 cent portions, hard pretzels, and plain biscuits. Cake is on the menu only when it can be made in our own kitchen, and is then served in place of the dessert.

The soups, macaroni and cheese, baked beans, beef on toast, hot roast beef sandwiches, and puddings are all very popular. At the William Penn High School, we frequently serve 40 gallons of soup, 18 gallons of baked beans, 400 sandwiches, and 1200 portions of pudding and ice cream in a single day.

At all of the schools the soup, substantial dish, and desserts are varied each day and a record is kept of the daily menu showing the number of portions served. For this record a printed card is provided each week by the central office. At the end of the week this menu report is sent to the superintendent, who compares it with the record of the preceding week and makes suggestions for any changes which may give better combinations or a greater variety in the menu for the coming week.

A table d'hote luncheon for 15 cents or 20 cents is served each day to the faculty in the large schools. The teachers from a grammar school several squares away come every day to one of our buildings for their lunch, and in one of the small schools there are about fifteen pupils coming from a grammar school near by. These boys requested to be allowed to patronize our lunch counter.

Each school is visited once a week by the superintendent, or by one of the assistants, during the morning or at the luncheon hour. The central office is in communication with each school by telephone every day.

In order that the inexpensive school lunch room may be self-supporting and at the same time maintain a high standard of excellence, the buying must be done most carefully by a person who is thoroughly familiar with all food supplies. She must also follow the food that was ordered into the kitchen and to the lunch counter and be able to detect wasteful methods on the part of employees, for it is only by exercising true economy in every section of the work that success will be gained.

We have formulated a system for keeping a record of the supplies on hand. Each school is provided weekly with a supply sheet on which is printed a list of every article to be found in our store rooms. The person in charge notes in the first column on the sheet the amount of each article on hand, and in the next she records the amount received during the week. The quantities used each day are noted in other columns, so that at the end of each week the amounts in the store room will correspond with the last column on the sheet, it being the sum of the first two columns, less the stock used during the week. This total is used for the first column of the sheet for the following week. This sheet is then sent to the bookkeeper who transfers to an indexed card file the amounts received and the total on hand.

This handy desk record of all supplies in each school is very helpful when giving the weekly orders, and it simplifies the work of preparing the monthly financial statement. It is also useful in stimulating greater care in the use of supplies by those in charge of the various schools.

The following is a portion of a weekly supply sheet:

Name of School.....*Week ending*.....

	SUPPLY	RECEIVED	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	BALANCE
Salmon	.....	.....	.....	.....	.....	.....	.....	.....
Sardines	.....	.....	.....	.....	.....	.....	.....	.....
Tongue	.....	.....	.....	.....	.....	.....	.....	.....
Soup stock	.....	.....	.....	.....	.....	.....	.....	.....
Tomatoes	.....	.....	.....	.....	.....	.....	.....	.....

The equipment for the school lunch room depends upon the character of luncheon to be served, the number of pupils and teachers in the school, and the kind of helpers employed.

When planning the *ideal* kitchen or lunch room for a large school, one must consult with the architect who is making the original plans for the building. He must consider the location of all permanent equipment; steam cookers, range, sinks, counters etc., that he may provide for adequate ventilation and underdrainage. Few of us, however, have this opportunity of beginning with the building and must make the best of conditions that we find in old, poorly planned buildings. At our William Penn School the present plan of having food

prepared at the school was not so much as thought of until the building was completed. On this account we suffer daily from inadequate floor space in kitchen and pantry, in the seating capacity of the lunch room, and from insufficient ventilation and drainage. But we have made the best of these conditions in arranging the present plant which now provides for 2200 pupils and 90 teachers.

In the annexes it had been necessary for us to adapt various existing conditions to our needs. For instance, in one of these schools we use for our kitchen a room that was originally intended for the kitchen of a private house. For serving we have placed a counter across a window, and a serving table (heated by gas) in a doorway of the old mansion. The four hundred students file past this window and door, are served, and then go into the class rooms, using the desks as tables. All soiled dishes are returned to the counter, and the class rooms left in order at the close of the recess period.

In another building a closet, having one window, is used for our kitchen, and a table placed in the hall in front of the door answers for a counter. Even in our large schools we do not employ men chefs or colored cooks, but have all of the cooking done by domestic science graduates, assisted by women with home experience.

We are hoping to coöperate in the near future with the domestic science department of the high school, and give the students who are taking the vocational course the opportunity of actual experience in the preparation of food in large quantities and in the management of the lunch room. Through this training a girl may be assisted in finding congenial employment, and we shall probably secure some very valuable permanent assistants.

We are also making arrangements with the director of the domestic science department of Drexel Institute to provide a place for students who wish to gain experience in luncheon management. By this plan students who are taking the institutional course may spend some time in our schools, as pupil dietitians, before receiving the Drexel certificate.

THE FLOUR AND YEAST IN BREAD.

FLORENCE I. DUDLEY.

Agricultural College of Utah.

Good bread indicates a relatively well advanced stage of civilization. Many housekeepers of today make good bread, but often they neither understand the reasons for the methods used, nor know the cause of the difficulties which may arise. The tests here reported were made at the Agricultural College of Utah, in the hope of explaining some of these difficulties.

The two most important ingredients of bread making, the flour and the yeast, are also the most variable. The quality of the flour depends both upon the kind of wheat used, and the way in which it is milled. Hard wheats, in general, make better bread flour than soft wheats. Those used in the baking tests summarized below were common Utah varieties, which had been studied at the Utah Experiment Station. The names of the flours, "high patent," "straight grade," etc., correspond to those in common use in most sections of the United States.

The following standard recipe is characteristic of those followed in the tests:

Milk and Water Bread.

One cup scalded milk in one cup water. (Better bread is obtained if the water has been boiled.)

One yeast cake dissolved, or its equivalent of liquid yeast.

One-fourth cup lukewarm water.

One and one-half teaspoonfuls salt.

Two tablespoonfuls sugar.

One tablespoonful lard.

One tablespoonful butter.

About 6 cups sifted flour, or 1 cup high patent flour and enough entire wheat flour to knead.

The sugar, lard, and butter may be omitted if desired.

Put the butter, lard, and sugar (if used) and the salt in a bread raiser, pour on the scalded milk, and add the water. When lukewarm, add the dissolved yeast cake and five cups of flour; then stir until thoroughly mixed. Add flour, enough to knead, let rise until it doubles in size, knead down again, and let rise a second time. This second kneading and rising is sometimes omitted, but bread has a better texture when it is so treated, no matter what kind of yeast is used. Form into loaves, place in the pan, let rise until it doubles its bulk, and then bake.

Difficulties in bread making due to flour.—Gluten is, of course, the most important ingredient in flour for bread making purposes. It is composed of gliaden and glutenin, and the bread making quality depends on the proportion of the two. The gliaden, a sort of plant gelatin, is the material which binds the flour particles together to form the dough, thus giving it tenacity and adhesiveness, and the glutenin is the part to which the gliaden adheres. If the gliaden is in excess, the dough will be soft and sticky; in case of a deficiency there is lack of expansive power. A flour may have a high percentage of gluten and total protein and still not produce the best bread, because of an imperfect blending of the gliaden and the glutenin. The more gluten there is in a flour the more water it will absorb, and it has been found that flour of about 12 per cent gluten makes the most satisfactory bread, providing its two parts, gliaden and glutenin, are well balanced.

Sometimes bread looks very promising when it first begins to rise, but when it is ready to be formed into loaves it becomes flat instead of rounding over the top. This may be due to such causes as (1) lack of gluten in the flour; (2) an insufficient amount of flour; or (3) the flour made from frosted wheat.

The influence of hot and cold flour on bread making.—When flour is kept in a cold place—especially during the cold months of the year—and used without warming it, it is not in a good condition to make bread. Cold checks the action of fermentation and occasionally becomes the cause of bad bread. On the other hand, flour for bread may be heated too high. Dough made from flour that has been heated to about 158°F. does not make the best bread, because the dough will be too soft and will have a tendency to be ropy. The best temperature for flour is 70°F.

Wetting in bread.—The practice of using milk in domestic bread making is quite prevalent in some sections. That the custom does not become more general must be due either to the lack of appreciation of the food value of milk, or because it requires more care to use milk successfully.

Excellent and nutritious bread is made with whey or scalded buttermilk or skimmed milk as part of the wetting, instead of water alone. The addition of skimmed milk, buttermilk, or whey has very much the same effect as regards food value, with the exception of the fat content, as is shown in the following table. The use of whole milk as a part of the wetting adds the most to the food value of the bread, but it is more expensive than the other milk products mentioned. The follow-

ing table shows the composition of whole milk, skimmed milk, and buttermilk:

Relative composition of whole milk, skimmed milk, and buttermilk.

KIND OF MILK.	WATER.	PROTEIN.	FAT.	CARBO-HYDRATES.	MINERAL MATTER.
	Per cent.	*Per cent.*	*Per cent.*	*Per cent.*	*Per cent.*
Whole milk	87.0	3.3	4.0	5.0	0.7
Skimmed milk	90.5	3.3	0.3	5.0	0.7
Buttermilk	91.0	3.0	0.5	4.8	0.7

Yeast.—Yeast requires moisture, warmth, and food for growth; no matter what form of yeast is used by the housekeeper, it must be provided with these conditions for growth to make the bread light. Dry yeast cakes, compressed yeast, and so-called "live" yeast (the home-made liquid yeast often called "elastic," "elective," or "germ") are the sorts usually used in Utah households.

Moisture is lacking in commercial dry cake yeast and it keeps for a long time; in the others moisture is present and the yeast plants "work themselves out" or die. A temperature a little below body temperature (74°F.) is best for the growth of yeast. This is the reason for keeping the bread lukewarm. The principal food for growth for yeast is sugar, or if this is not present, it converts starch into sugar. Potato water added to yeast contains starch and mineral matter which is also needed, and therefore is a good food for the yeast. Even a very low temperature does not kill yeast—it merely checks its growth—but boiling will kill it.

Experiments made as a part of the study here reported have shown that 337 cc. "live" yeast (i.e., the home-made liquid yeast), or 1½ cups, are equivalent to 6 grams compressed yeast; 787.5 cc. "live" yeast are equivalent to 1 compressed yeast cake; 335 cc. "live" yeast are equivalent to 1 dry yeast cake.

The following summary of data regarding yeast includes the result of numerous experiments which were carried on, as well as some general data. The commercial dry yeast is the yeast plant mixed with some flour and corn meal and dried at a low heat. In this form it can be kept for a year or longer. It eventually grows weaker and dies out in keeping. Because of its keeping qualities, it is a convenient form for the housekeeper to have at hand. It can be used to "start" "live" (liquid) yeast if the yeast is wet up with water and the corn meal is

carefully strained out. In using it for bread, the yeast cake should be soaked in one cup of lukewarm water for one hour; then a sponge should be made of this by adding 1½ cups of flour. Allow this to rise in a warm place from four to six hours and the sponge is ready for use. In the experience of housekeepers bread made from this dry yeast is not good unless the water has been boiled.

Compressed yeast is a very satisfactory source of yeast for those who live in towns or cities where it may be purchased fresh in the market. It is a perishable article, only lasting in good condition for a few days when kept on ice. Care should be taken that the cake, after it has been opened and not all used, is rewrapped in the tin foil, as it deteriorates more readily if left open. The so-called quick process bread is made in from four to five hours by using a larger quantity of yeast, while long process bread is made in from eight to twelve hours. For 1 cup (225 cc.) of liquid 3 grams of compressed yeast cake is necessary for long process bread, and 10 grams for quick process bread; 1 quart of wetting (900 cc.) requires 6 grams for long process bread, and 26.5 grams for quick process bread.

"Live" yeast, as the old-fashioned liquid yeast is known in Utah, when home made is very satisfactory and can be made and kept by any housekeeper who chooses to do so. Formerly it was thought necessary to get a "start" from a neighbor, but this is now an idea of the past. "Live" yeast can be started from compressed yeast, or dry yeast cakes. "Live" yeast is ordinarily made as follows: Boil 1½ cup potatoes in 1 quart water until done; to the potato water add 2 ounces sugar, and when cooled to lukewarm temperature add about ¼ yeast cake. Keep in a warm place and in from two to eight hours the yeast will be ready for use. The time depends upon whether proper conditions for growth are provided for or not. Be sure the yeast has worked well before bread is made with it, and use only the cupful taken from the top of the yeast for a new starter.

It has been found by the experiments here summarized that (1) the yeast, when no mashed potato is added to the water, grows faster and does not require so much sugar to keep it sweet, although the bread will not be as moist; (2) salt retards the working of yeast a little but not to any great extent; (and 3) a little ginger hastens it. In the experiments with the ginger, one cup of new yeast was placed in each of two flasks. The carbon dioxid given off in each case was measured by collecting the gas over water in a graduated measuring cylinder. It

was found at the end of three hours that the bottle to which $\frac{1}{16}$ of a teaspoonful of ginger had been added gave off 50 cc. of gas, while the other one gave off only 30 cc.

Washing yeast.—When the yeast "wears out" it makes bread similar to bread made from sour yeast. It can be renewed by adding water and allowing it to stand a few hours, then turning the water off, leaving the yeast in the bottom. If washed again, sugar and potato water added, and allowed to rise, it will make bread as good as when it was new. This washing seems to remove foreign micro-organisms. However, it is easier to make new yeast from yeast cake, and most people do so instead of washing the worn-out yeast.

Feeding yeast.—Yeast in liquid form prepared at home may be kept alive and active by adding sugar. It is more economical, however, to save the top part of liquid yeast and add it to potato water a few hours before using, as in this way less sugar is necessary. In an experiment yeast eight days old and yeast twelve hours old made bread of the same quality. The yeast was made and kept growing for eight days by the addition of sugar. Another jar of yeast was made and kept for six hours, and bread was made from both of these yeasts at the same time. The results were similar and the breads were both good.

Sour yeast.—When it is kept too long, yeast sometimes turns sour; this is probably due to other micro-organisms besides yeast plants developing in it, giving off acid in their growth. It is sometimes possible to sweeten sour yeast by the addition of a little soda and make good bread from it, but it will not do for a starter for new yeast. Of course, much depends on the length of time the yeast has been sour. In one case where yeast soured and stood a long time, then was given food, it became slimy and thick as a result of the foreign micro-organisms that developed in the liquid. This yeast made a fairly good loaf of bread, however. In case of very slight sourness in yeast, sugar will sometimes counteract it.

Frozen yeast.—Yeast that has been frozen cannot be depended upon to make bread. The reason for this is not entirely understood, but it is probably due to the fact that the cold destroys the vitality of the yeast cells so thoroughly that when a higher temperature is restored the cells are no longer able to renew their growth. The exact amount of cold necessary thus to deaden the cells is not definitely known.

Bread Experiments With Different Flours and Yeasts.

Nineteen baking experiments were made with flours from different types of Utah wheat and with different kinds of yeast prepared in different ways. The kind and amounts of yeast, the amounts of other constituents, and other data are shown in the following table:

Kind and amount of material used in making bread.

No. of sample.	Dry commercial yeast.	Compressed yeast.	"Live" or liquid yeast.	Water.	Sugar.	Salt.	Flour.	Kind of flour.	Time in sponge.
	Gms.	*Gms.*	*Cc.*	*Cc.*	*Gms.*	*Gms.*	*Gms.*		*Hours.*
1	8			900	20	10	1468	Straight grade	¾
2	7			900	20	10	1600	High patent	6
3	8			900	20	10	1700	High patent	6
4	7			900	20	10	1700	Straight grade	6
5		6.0		900	20	10	1500	High patent	2
6		26.5		900	20	10	1490	High patent	1
7		10.0		225	16	4	382	High patent	1
8		10.0		225	16	4	389	Straight grade	2
9		10.0		225	16	4	329	High patent	2
10		10.0		225	16	4	390	Turkey	2
11		10.0		225	16	4	356	Straight grade	2
12		10.0		225	16	4	346	High patent	2
13		10.0		225	16	4	390	Kofod	2
14			225		16	4	328	Turkey	
15			225		16	4	375	High patent	
16			225		16	4	365	High patent	
17			225		16	4	392	Straight grade	
18			900		20	10	1324	High patent	
19			65		16	4	368	Straight grade	

The following table shows the time the different samples were allowed to rise, the duration of the baking period, the quality of the bread, and similar data.

It will be seen that in most cases the bread was of fair quality. In only one case was the quality poor, and in several it was excellent.

Results of experimental studies of bread.

NO. OF SAMPLE.	TIME OF FIRST RISING.	TIME OF SECOND RISING.	TIME IN PANS.	TIME IN OVEN.	TEXTURE OF BREAD.	FLAVOR OF BREAD.	WEIGHT OF ONE LOAF.	REMARKS.
	Hours.	*Hours.*	*Hours.*	*Hours.*			*Gms.*	
1	9	2½	1	¾	Fair	Good	830	Yellow bread, 335 grams flour added at first kneading, 60 grams when put in pans. Bread was ropy.
2	10	1½	1	¾	Fair	Good	1090	
3	10	1½	1	¾	Fair	Good	900	
4	10	2	1	¾	Good	Good	1000	
5	9	3	1	1	Excel.	Excel.	476	
6	2	1	1½	1	Good	Good	1095	A little yellow.
7	2		1	¾	Excel.	Excel.	539	A little yellow.
8	2		1	1	Excel.	Excel.	530	
9	2½		1	¾	Fair	Good	509	
10	2		1	1	Poor	Poor	475	
11	2		1	1	Excel.	Excel.	466	One loaf in each case.
12	2		1	1	Fair	Good	494	
13	2		1	1	Good	Good	461	
14	2		1	¾	Excel.	Good	899	
15	2½		1.15	¾	Good	Good	503	
16	2½		1.10	¾	Excel.	Excel.	576	
17	3		1.10	¾	Excel.	Excel.	473	Made two loaves.
18	1½	1	¾	¾	Good	Good		Yellow.
19	4	2	1	¾	Good	Good		

The data obtained in the experiments briefly reported in the above tables and in the tests with yeast may be summarized as follows:

Conclusions.

(1) The quality of flour for bread making depends upon the percentage of gluten in the flour, and the proportion of gliaden and glutenin in the gluten.

(2) The temperature of the flour affects the quality of bread made from it. The best temperature is 70°F.

(3) Nutritive material is added to bread by using whole milk, skimmed milk, and buttermilk for wetting, instead of all or part of the water commonly used.

(4) Quick process bread of good flavor and texture can be made in four hours with "live" yeast as the only moisture.

(5) The length of time required to raise yeast depends upon conditions. If the yeast plants are alive and active, four tablespoonfuls of liquid yeast to two cups of potato water will rise in five hours. One cup of yeast full of life will start 2 or 3 quarts of potato water in from two to six hours if held at the correct temperature, which is about 70°F.

(6) As far as food for the yeast is concerned, it is not necessary to add potato to the potato water. However, yeast with this addition makes more moist bread than does yeast made without potato.

(7) Sour yeast may sometimes be sweetened by a little sugar or a little soda. Such sweetened yeast is, however, not strong enough to use as a starter for new yeast, and if it is too sour cannot be used for any purpose.

(8) Yeast that has been frozen cannot be depended upon to make bread.

(9) Ginger hastens the growth of yeast.

(10) Salt retards the growth of yeast slightly.

FACTORS AFFECTING THE ECONOMIC AND THE DIETETIC VALUE OF FOODS. No 1. A STUDY OF CAKES.[1]

Ava B. Milam.

Outline of the Dissertation.

I. *Introduction.*
   Origin and history of cakes.
II. *Purpose and plan of the experiment.*
   1. Purpose of the experiment.
   2. Method of work.
   3. Proportions of ingredients.
   4. Baking.
III. *Variation in methods.*
   1. Of mixing.
   2. Of melting and creaming the fat.

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[1] An outline of a dissertation submitted to the faculty of the Graduate School of Arts and Literature, University of Chicago, in candidacy for the degree of Master of Arts, department of household administration.

IV. *Flours.*

1. Properties affecting the quality, the economic and the dietetic value of cakes.
   - A. Grades.
   - B. Physical properties.
     1. Color.
     2. Granulation.
   - C. Composition.
     1. Gliadin.
     2. Glutenin.
     3. Gluten.
     4. Starch.
2. Use of various grades of flour.
   - A. Comparison of a fine grade pastry, ordinary pastry, and bread flour.
   - B. Comparison of a fine grade pastry, ordinary pastry and bread flour to which corn starch is added.

V. *Sugar.*

1. Properties affecting the quality, the economic and the dietetic value of cakes.
   - A. Influence of amount of texture and grain.
   - B. Forms of sugar.
     1. Granulated.
     2. Powdered.
     3. Soft brown.
2. Use of various forms of sugar. Comparison of powdered, granulated, and sugar syrup on cakes.

VI. *Liquids.*

1. Properties affecting the quality, the economic and the dietetic value of cakes.
   - A. Of water.
   - B. Of whole milk.
   - C. Of condensed milk (diluted).
   - D. Of milk powders (desiccated milk dissolved.)
2. Use of various liquids.
   - A. Comparison of whole milk, condensed milk (diluted) and water.

VII. *Eggs, desiccated egg, and egg substitutes.*

1. Properties affecting the quality, the economic and the dietetic value of cakes.
   - A. Of whole fresh eggs.
   - B. Of cold storage eggs.
   - C. Of broken eggs.
   - D. Of desiccated eggs.
   - E. Of egg substitutes.
2. Use of various forms of eggs; comparison of whole eggs, desiccated eggs and egg substitutes.

VIII. *Fats.*
  1. Properties affecting the quality, the economic and the dietetic value of cakes.
    A. Of butter.
    B. Of oleomargarine.
    C. Of lard.
    D. Of commercial lard substitutes.
  2. Use of various fats.
    A. Comparison of different amounts.
    B. Comparison of butter, lard, and lard substitutes.

IX. *Food value of cake.*

X. *Summary of experimental results.*

Purpose and Plan of the Experiment.

Purpose of the study.—When an article of diet comes into as general use as has cake, the factors affecting its economic and dietetic value as well as its quality justify study. There is a lack of definite knowledge of these factors and inadequate means of controlling the conditions. The purpose of this study was to show the effect of varying the kind and form of ingredients on the quality, the cost, and the economic and dietetic value of cakes.

Method of work.—The work was carried out on a typical whole egg-butter cake, one of a close grain and fine texture. In many cases the experiments were repeated on a corresponding white cake, differing only in the use of the egg white instead of the whole eggs. Exact weighed amounts of ingredients were used. Every effort was made to prevent any variation in the experiment except for the factor which formed the basis of the experiment in hand. Therefore any difference in the resulting cakes might be attributed to this factor.

In all this work one-fourth the recipe was used, duplicate experiments being carried out in every case, and a final check with the entire recipe.

The tests were made by the instructors in the department.

The prices quoted are retail Chicago prices.

The baking.—The cakes were baked in small oval pans each containing 125 grams of batter and labelled. From the results of previous work of the department, 198°C. was accepted as the most desirable temperature for cake baking. Therefore all the cakes reported in these experiments were baked at this temperature and cakes belonging to the same group were placed in the oven at the same time. While an effort was made to keep the temperature of the oven constant at 195°, a slight variation of a degree or two at times seemed unavoidable.

Summary.

1. The cost of cakes may be reduced from the standpoint of time consumed in the mixing, since the fat used in cakes may be melted as well as creamed. According to Miss Wellman this is estimated to save, on the average, one-half the time consumed in mixing.

2. Good cakes may be obtained from the use of bread flour; still better may be obtained with bread flour, reducing its gluten content to more nearly approximate the gluten content of pastry flour; the best cakes, however, are obtained by the use of the fine pastry flours.

3. Apparently it is the gluten content of the flour that has the most decided influence on the quality of the resulting cakes. So high a gluten content as is found in bread is probably undesirable for use in cakes.

4. The difference in the cost of flours is a factor to be considered. The cost for the 3-cup flour recipe is as follows: Bread flour, 2.3 cents; ordinary pastry 4 cents; and fine grade pastry 6 cents.

5. The form of the sugar has a marked effect on the quality of the cake produced, with little effect on the cost.

6. It is most desirable to have the sugar for cake-making in the form in which it can be most easily and thoroughly mixed, so long as it is kept in a solid state. So powdered sugar affords the most desirable form.

7. The use of powdered sugar is not extravagant in most cases as it adds only 1.1 cents to the cost of cakes made of rolled and sifted granulated sugar.

8. Cakes of as good quality may be obtained with water as with whole or condensed milk.

9. The use of water in cakes means a lowering of cost, a decrease of 1.5 cents (milk at 8 cents per quart) on the cost of the entire cake.

10. By the use of water the food value of cake is also decreased.

11. The greatest gain from the use of water in cake-making arises from the availability, which is a factor quite worthy of consideration.

12. The use of eggs is quite essential in cake-making. They not only serve as partial leavening agents, but they bear a decided influence on the flavor, texture, grain, and food value of the cake.

13. If whole, fresh eggs are not available, desiccated eggs may be used and a fairly good cake obtained, provided the powders are fresh.

14. The effect of the substitution of desiccated eggs for fresh whole eggs on the cost of cake varies according to the locality and season of the year.

15. With the standard 3-cup flour recipe one-half cup of butter seemed to give a cake of the best quality. This means a reduction of 5.1 cents for the ordinary sized cake, estimating butter at 32 cents per pound.

16. In reducing the amount of butter from ¾ cup to ½ cup the food value of cake is lowered.

17. Commercial lard substitutes and lard when fresh may be substituted for butter in both whole eggs and white cake without detection, provided the cakes are not eaten when warm.

18. When fats containing no salt, and the fat content of which is practically 100 per cent, are substituted for butter in cake-making, less of the fats should be used with an additional amount of salt.

19. By the substitution of these fats for butter the cost of the cakes is reduced perceptibly, varying from 10.2 cents for butter to from 2.6 cents to 3.1 cents for lard substitutes, 4.6 cents for butterine and 3.1 cents for lard. The difference in the cost of cakes made with the differents fats will vary with different localities and different seasons.

20. Of the cheaper fats used the lard substitutes seemed the most satisfactory, but oleomargarine was not tried.

21. In the use of the fats care should be taken that they are fresh, for when rancid they are easily distinguished from butter in cakes even by tastes that are not particularly sensitive.

22. Cake is a fairly concentrated form of food, the average serving containing practically as much food value as one and one-half glasses of milk. So long as it is considered as an accessory to the diet rather than an integral part of it, a decrease in the concentration by the substitution of water for milk and by a decrease in the fat content would not seem objectionable.

THE HOUSEHOLD EXPERIMENT STATION AT COLONIA, N. J.

In a small suburb near New York, in a widespreading pleasant country house, has been going on an experiment of much interest to the practical housekeeper. Here lives Mrs. Frank A. Pattison, who when elected three years ago to the presidency of the Federated Clubs of her state, began the duties of her office by first conquering her own home domain. To quote Mrs. Pattison,

> Under my existing arrangement of home obligations, it seemed impossible for me to crowd in another duty. I had either to engage more servants, or to find some other way out of the difficulty. Additional servants meant more time in training them to better ways of procedure, and a double expense to the home. So I began a systematic stock-taking of those responsibilities which were already overbalancing my energies and resources.
>
> I came to the conclusion that absolute self-independence was as necessary to me, as the manager of my home, as it was to any other manager in any other position of trust. This was the goal toward which all my energies must be directed, and for this end my success was dependent upon two factors. The first was the reorganization of methods of housework along modern scientific lines; the second was the elimination of all non-essentials.

Mrs. Pattison feels that it is "practically impossible to raise housework to its true position of dignity so long as we have the present servant class, therefore our first thought must be to help along their tendency to become scarce, and to encourage the formation of a professional type of men and women who will come to our homes by the hour, or day, as one goes to one's office."

But how was this to be done? Only "by eliminating drudgery, the unpleasant methods of doing certain tasks and the long hours of labor under slave contract methods."

> Cheap and poor labor is the prominent cause for clinging to such crude instruments as, for instance, the scrubbing brush and the wash board, not to mention the ill-adapted wood and coal stove, and the dark cellar cold storage. Men in their industries have progressed enormously further in rapid ways of accomplishment and in ease of operation, including results in new and wonderful fields.
>
> If women are to become useful, effective, and independent citizens of the community, or state, they must first prove themselves domestically independent and not weaklings, living under the fear of the cook's giving notice, and the inability to make both ends meet.

Mrs. Pattison resolved from the first on an extensive use of labor-saving appliances, especially electrical, and an application of the new principles of business efficiency. She says, to quote again,

> There are in this country and England thousands of patents of labor-saving devices. Some of them are excellent. A great many of them are no use at all. The same idea may be contained in several mechanical inventions of different makers. Half may be expensive and useless, and the other half just what women want. It is our business to find out the good things and steer the women away from the bad ones. A great deal of the indifference among women to labor saving devices comes from the fact that pretty nearly everybody has been cheated with them at one time or another.

As the first step in her experiment Mrs. Pattison dismissed her three servants and with the wage and board money saved she installed new and modern conveniences, first in the kitchen, then in the laundry, and finally through the entire house. At the end of the first year she owned a dishwasher, a washing-machine, a vacuum cleaner, a fireless cooker, electric irons, and many other modern appliances, "not the least useful of which is the dustless mop."

All over the house she uses waxed floors and rugs. She has replaced the ordinary kitchen table top by glass and marble, she has eliminated all heavy and hard-to-clean cooking utensils, even though they be heirlooms. A good sized pantry has been made over into a kitchenette and here most of the cooking is done with the help of a small gas stove and a fireless cooker. An electric motor, known in the family as "James the Great" performs a variety of tasks; it polishes the silver, grinds the coffee, freezes ice-cream, grates cheese or chocolate, chops meat, does the family washing, and as it can be wheeled about to any part of the house, it runs the vacuum cleaner. A gas incinerator for garbage is a favorite with Mrs. Pattison. It does its work in the cellar to which the garbage descends by a tube from the sink, burning a bushel of garbage at a cost of three cents for gas. By the help of these various appliances and by a strict cutting down of needless work, as the substitution of paper tablecloths, napkins, and towels for the linen formerly used, Mrs. Pattison has been able to do the work in this large country house for a family of four and many occasional guests with the exception of the washing of bed linen and shirts; she has "brought down the cost of everything, even the coal for the furnace, lived better, and did not have a day's sickness to record." She has even given dinner parties to twenty guests unaided by outside help.

Table service is made possible by the use of a "Susan," a small table top placed in the center of the dining table and revolving on a pivot placed on a pedestal. This may hold salad or dessert or whatever is needed during the meal, so that each person may help himself in turn. There is also in use a wheeled double-decker cart which holds many dishes together with the electric heater for making coffee, boiling eggs, etc. Mrs. Pattison is even willing to give her schedule for a day:

> Our train service makes it necessary to breakfast at seven o'clock. Having arranged the table as much as possible the night before, we are ready for breakfast in the morning in from two to fifteen minutes. Fruit, cereal, eggs if desired, with toast and coffee prepared at the table on electric devices, constitute the meal. The coffee is filtered into a thermos jug and remains hot until any hour it may be desired. Such a meal, served for four, is readily cleared away in from fifteen to twenty minutes. Taking a few minutes to run over the floors each morning with a dustless mop reduces special cleaning times, which are again minimized by the use of a vacuum cleaner, on no especial day, but whenever found convenient. The beds have by this time been aired for an hour or more and are ready for spreading. It really takes one person just four minutes to make the ordinary bed. The tidying-up process is made simple by cultivating the habits of the family so that each looks after his own bath-tub and basin, clothes, etc. A forethought for the evening meal as to soup, meat, or vegetables, by putting them hot into the fireless cooker, made it practical for me to take the 9:15 train to any part of the state when necessary, or to attend to Federation work accumulated at home. A simple luncheon was left ready to serve—salad, soup, and cold meat left from the night before. Upon the arrival of the evening train, if I had spent the entire day away from home, it was a simple matter to take the dinner, thoroughly and deliciously cooked, from the fireless cooker.

This is a record of which any woman may well be proud, but Mrs. Pattison has not been content to solve her own problem. She offered a small four-roomed house on her place for a true experiment station for the New Jersey Federation where all manner of appliances could be tried out, and to the formal opening of this building last June came hundreds of club women from all parts of the state. We understand that the special work of this station is to be fully described in a book soon to be issued. Such a book will of course furnish the detailed statements, estimates, time schedules, and costs that one cannot expect from popular lectures and articles which now form our source of knowledge of this very interesting experiment.

AFTER SOME YEARS OF EXPERIMENTATION, WHAT IS THE EDUCATIONAL AIM, METHOD, AND ACCOMPLISHMENT IN COLLEGE COURSES IN DOMESTIC ART?

The following is a partial report of the round table on domestic art which constituted a portion of the program of the meeting of the American Home Economics Association held in Washington, D. C., December 27-30, 1911. Miss Agnes Houston Craig, director of domestic art, College of Industrial Arts, Denton, Texas, was leader of the round table, and opened the program with the following report and recommendations on domestic art education:

REPORT AND RECOMMENDATIONS ON DOMESTIC ART EDUCATION.

MISS AGNES HOUSTON CRAIG.

College of Industrial Arts, Denton, Texas.

The purpose of this discussion is to suggest a more definite and unified conception of (1) the scope of domestic art education together with its aim, method, and accomplishment; (2) its relative values and vital relationship to the general subject of Home Economics; (3) the prerequisite training that should be required for entrance to college courses of this kind; (4) the content of a well-balanced college course in domestic art; and (5) its cultural value.

There seems to be some confusion in the average mind as to just what is meant by the term domestic art. After consulting any standard dictionary the meaning will be obvious, also the fact that the terms domestic art, home art, household art are synonymous. Therefore, the subject matter of any course so designated should logically include all phases of art education as it is related to home construction, the creating and maintaining of a desirable home atmosphere, and home activities, educational and social.

In too many of our higher schools domestic art is represented through merely technical instruction in sewing, dressmaking, and millinery. Such technical courses in these three subjects alone have but slight

educational value and together constitute but a minor interest in the household arts.

Contrasted with them the shelter phases of domestic art offer a much more important field for investigation and study. This subject-matter should include the artistic problems belonging to home architecture, landscape gardening as a distinctive home interest as well as in its broader relation to the development of more general civic order and beauty, interior decoration as a necessary and practical feature of economics in home furnishing, textiles in their various uses for furnishing and clothing, and the vital but too much neglected interests that are rightfully classed as "social consumption" or appurtenances to the higher life.

Properly speaking, household art and science should not be divorced in education as they so frequently are. Each group has its distinct place in the well-organized home, but the household that dwells entirely on the interests commonly classed as domestic science is just as unbalanced as the one that considers esthetics to the exclusion of the important problems involved in food and sanitation.

The application of theoretical training in both groups requires expression in some definite form. If this expression or practical application is to be of such character as to result in appreciably elevating the general standard of living, physically, intellectually, and spiritually, it is necessary that students be prepared to express themselves through these mediums by such fundamental training as will contribute to the intellectual growth that alone makes expression of any kind possible. For this reason it is essential to determine definitely first, the material out of which our substructure should be built, and secondly, the elements entering into the superstructure.

Home Economics properly includes all phases of household art, household science, and household administration. Throughout the country domestic science is better organized than domestic art. In most colleges a marked differentiation is made in the standard for entrance requirements to these different groups of subject matter, stricter requirements being exacted of the students electing domestic science. From an educational point of view this condition is most unjust, for distinguished accomplishment in either line depends on much the same kind of preparatory training. This fundamental drill should supply the requisites to expression of any kind; namely accumulated knowledge born of experience or acquired through study, the habit of reflection, and the power to reorganize material.

When we take into consideration the modern conception that is slowly gaining favor of woman's economic responsibility, it is as necessary that she be trained to apply consciously and intelligently the rules of scientific management to the expenditure of the income in the housekeeping business as that man shall understand the economic laws of producing wealth. All the factors properly listed under domestic art are of peculiar interest to women and also have a tremendous economic significance.

Let us consider briefly the following propositions in their relation to this class of education:

1. *Domestic art education should be built on an economic basis.*—In general economics we readily recognize man's relation to the great activities of production and distribution, but so far few of us have acknowledged the important function of the home, the so-called woman's sphere, on controlling both these fields through the demands created by the field of consumption. In the business world systematic management and order are essential to any degree of economic wellbeing yet how few people seem to relate the parts of home making with the economic principles involved in other forms of successful business management. Indeed home making is a business second to none in importance or in the variety of its interests, therefore women should consciously understand economic laws as they are applicable to art expression and scientific management within the home.

2. *The physical and biological sciences cannot be properly separated from it.*—Next in importance to her economic consciousness it is neccessary that women be trained in certain forms of exact knowledge. The need of this is threefold; because of the mental training acquired, because of the fund of classified knowledge accumulated, and for the purpose of developing method in constructive processes. For this kind of training the sciences are invaluable and are inseparable from the various interests involved in household art; therefore we need gradual, solid training along scientific lines, always keeping in mind the basic economic idea. But scientific training alone is not sufficient, which fact brings us to the third proposition:

3. *All constructive expression depends on a thorough knowledge of the principles of art.*—Again let me repeat that good art is an economic asset and that as such it has a vital relationship to the wise expenditure of the income. All students should have a working knowledge of at least freehand drawing, design, and historic ornament as they are related to construction before the technical constructive work is attempted.

Lack of interest in art training as fundamental to all constructive work is a short-sighted policy for two reasons: First, the processes of technical education are greatly prolonged, and second, the results with few exceptions, explained usually by the presence of native artistic feeling, are mediocre. You will frequently hear the excuse made that women possessing the artistic temperament cannot be scientifically trained. This is not true. The artistic person seldom takes to science for the sake of science, but let her realize the application of scientific material to the constructive problems of her art and you have her profound interest. Moreover it is easier to train the artistic temperament in scientific knowledge than it is to give the average scientist an artistic temperament. In some of our colleges we are putting in chemists to teach cooking—why not put in artists with the pre-requisite scientific training to teach household art?

4. *Technical skill should be rather the result of this training than the chief aim.*—The idea of developing the practical is the keynote to much of our inefficient industrial education because of the popular narrow conception of what practical education is. In the majority of schools technical practice is over-emphasized as practical education and is introduced too soon. Constructive processes in the main should come last because they depend for successful development on foundation work leading up to them. How can a student give concrete form to an idea when he has not the concept of what he wants to express? Yet in much of our industrial education this is what we are demanding, and this is why we are often failing in our results. One of the reforms most needed is the determining of the proportions of artistic and scientific training needed in their proper relationships to the technique required for constructive work. At present there is too little of the former and too much of the latter.

5. *The cultural and social value of training in domestic art.*—Character building is to a large extent developed within the home, the atmosphere of which reflects the sum total of the individual habits or the family. If this phase of Home Economics were more carefully considered, home training through rightly directed activities and social occupations would tend to eradicate many of the present social evils that debase or mar our social fabric. Social reform begun with the child must be more effectual than the veneer of reform that may be applied later. Here we have tremendous opportunities for the thoughtful directing and conservation of social and moral energy through the understanding of the relation of esthetic expression to the spirit of play,

as they form themselves into various phases of social experience. The idea of "social consumption" describes this field and suggests its economic significance. It includes the interests of general education; music, the greatest social unifier, literature, games, art as in the form of pictures, entertainment, travel, gardening, and outdoor life. These activities are entirely practical, for they materially raise the general standard of right living, and the direction of them added to the more material phases of domestic art means that women who administer the affairs of the home efficiently and nobly must have comprehensive vision and trained minds both economically and socially.

As a matter of fact the field of domestic art is so inclusive of practical and cultural knowledge that it is hard to know where to draw the line. For this very reason it seems deplorable that so many schools do not make more of the opportunities offered; therefore we shall take this opportunity to suggest some criticisms noted in an investigation of the work as it is being done at the present time in many institutions.

It has been my pleasure to investigate carefully the work of a variety of domestic art departments throughout the country. A questionnaire sent out has furnished much information from thirty institutions of which five were universities, thirteen colleges, and twelve normal schools of good standing. These institutions are distributed throughout twenty states and all list domestic art courses.

In the first place, most of them make a marked differentiation in the educational value of the domestic science and art courses and almost without exception the former is better established.

With reference to entrance requirements the qualifications are by no means adequate. Of the thirty only ten require any physical or natural science for entrance while nine make such subjects optional. In history and elementary economics only five require the latter and ten the former, while three make economics optional. In the fundamental art subjects, six require freehand drawing, one makes it an option, three require mechanical drawing, and only one requires any knowledge of the principles of design. In technical trainin gone requires an elementary knowledge of sewing.

Going a step further and considering the actual domestic art courses as they are formulated, we find that of these same thirty institutions only nine require any natural science and only eight any physical science as part of the course. Only five require general economics, nine give parallel art training, and all emphasize the technical work of sewing. In this enlightened age ten, or $33\frac{1}{3}$ per cent. of these schools

still teach the model system, and I notice one that gives a course which "deals with the history and manufacture of needles, pins, machines, scissors, and tape measures." We often wonder why people express belief that domestic art has no educational value. Right here we we have one reason. So often time is spent on non-essentials and the material really worth while is ignored. When we are studying chemistry do we first investigate the history of the test tube, and in domestic science do we give a course in the history of the carving knife and other implements used? If people feel an individual interest in these articles and if they are fairly intelligent they can investigate such items independently and not consume valuable class time in this way.

Another point that I wish to make is that at present there seems to be no definite agreement, with reasonable modification of course, as to the characteristic domestic art courses and the pre-requisites that should lead up to each. For the sake of clearness I will indicate the points under this head in outline form.

Status of domestic art instruction in 30 institutions, with recommendations as to pre-requisites.

SUBJECTS TAUGHT.	NUMBER.
1. Hand and machine sewing	30
a. No pre-requisites.	
b. Elementary textiles, freehand drawing, and first principles of design should be pre-requisite.	
2. Dressmaking	30
a. Pre-requisites listed:	
Color, drawing, design, textiles, decorative needlework	1
Drawing, watercolor, costume design	2
Textiles	4
Applied design	3
Drawing	4
b. Art work that should be pre-requisite: Drawing, design, color, textiles, decorative needlework, historic ornament, costume design.	
3. Textiles	21
a. Very elementary	13
b. Chemistry and microscopic	6
c. Weaving	8
d. Basketry alone	6
e. Develop laundry methods and theories for application (good progressive step)	5

Status of domestic art instruction in 30 institutions, with recommendations as to pre-requisites—Con.

SUBJECTS TAUGHT.	NUMBER.
4. Millinery	21
a. Pre-requisites listed:	
Color and design	2
Elementary sewing	2
Tailoring—(absurd)	1
b. Good work in millinery depends absolutely on good, conscious feeling for artistic expression.	
5. Methods and practice teaching	14
6. Pattern drafting	13
a. In this age of good mechanical patterns pattern drafting, except for trades courses, is undesirable.	
7. Reading and adaptation of patterns	3
a. A good step which should be more generally followed.	
8. Home furnishing	11
9. Interior decoration	7
10. Decorative needlework	15
a. One requires millinery as a pre-requisite (why?).	
b. Only five require previous art training, though good work in millinery depends on art feeling for good form and colors.	
11. Tailoring—(belongs in trades courses and not in general dômestic art courses.)	5
12. Costume design	5
13. Parallel art	9
14. History of costume	5
15. Household economics and management	5
16. Home architecture	5
17. History of ornament and art	2
18. Landscape gardening	2
19. Social consumption	1

A SUGGESTIVE OUTLINE.

Domestic or household art is interested chiefly in two of the three fundamental needs of man; namely, shelter and clothing. These two main groups may be best studied in their natural divisions of organized interests such as landscape gardening, home architecture, home decoration, home furnishing, social consumption, and administration

To point out the educational value of such study and the various phases of interest embodied in it let us observe the following outline which is merely suggestive and not by any means complete:

Shelter—Major Interest in Domestic Art.

Historical.	Economic.	Scientific.	Esthetic.	Constructive.	Social.
		1. Landscape Gardening.			
Development of types, relation to architecture, etc.	Cost—Building, maintenance, civic and home value.	Botany, horticulture, sanitation, etc.	Design. Decorative use of plants and flowers.	Methods of planting and cultivating.	Civic. Individual and home.
		2. Home Architecture.			
Types and adaptation to modern use for homes.	Cost—Building materials, repairs, maintenance, etc.	Heating, lighting, sanitation, etc.	Design in floor plans and structure.	Structural principles.	Arrangement of rooms for social use and convenience.
		3. Decoration and Furnishing.			
Art history. Relation of furniture types to architectural types.	Economy of good form, color, and various types of material.	Health considerations.	Application of art principles.	Processes.	Relation to social activities.
		4. Social Consumption.			
History of art. Historical relation of folk songs, stories, music, and other arts.	Economic value of the arts, especially music as a social centralizing power.	Apportionment of income for items of social consumption.	Relation of esthetics to social and play spirit in home and in communities.	Provision for music, literature, games, and expression of social arts in the home and community.	Practice of arts and appreciation of them as social forces in wholesome living.
		5. Administration.			
Knowledge of principles of economic laws. Institution of home.	Problems of income, etc.	Household scientific management and mechanics.	Conservation of money, time, energy, and commodities.	Methods of management.	Orderly living.
		Clothing.			
History of textiles and costume.	Relative income, problems of production and consumption.	Biology, physiology and hygiene, botany, and textile chemistry.	Relation of art principles in line, color, etc. to construction.	Pattern making, hand and machine sewing, etc.	Appropriate use from point of climate, health, occasion, age, income, etc.

The ethical and cultural results should be to raise the general standard of living through appreciation, trained taste in the laws of order, beauty, and economics, efficient living through the power to exercise scientific judgment, and put it into practice through scientific management on matters of shelter and clothing.

HOUSEHOLD ART FROM THE STANDPOINT OF ECONOMICS.

MISS GERTRUDE VAN HOESEN.

University of Chicago.

The plea for the introduction of a course in household art must be made as general as possible if it is to be accepted by the faculties of our colleges. In presenting this plea we may distinguish between three types of economic activity: The first, in the narrow sense of the producer who makes a commodity for the market; the second, that broader type which occupies the attention of the distributor who handles the finished product and sees that it is brought to the attention of the consumer; and the third and more comprehensive economic interest belonging to the field of the consumer. The breadth of this last class can perhaps be most emphatically brought out by the fact that the producer and the distributor are consumers also. In the matter of textiles this general class includes every member of society.

This general analysis of the economic interests which attach to the textile industries make it clear that if we are to organize a broad general course for college students we must push into the foreground the economic interest of the consumer. The interest of this class is first of all in the quality of the goods which he consumes and in the proper service which different types of goods may render him. This knowledge of quality and service is by no means easy of acquisition by the modern consumer. He is so far removed from the source of supply that he is not aware of the essential characteristics of the fabrics which he inspects. He needs to have methods of investigation which will make it possible for him to examine the fabrics minutely and effectively with regard to their composition and durability. It is interesting to note at this point that the broad interests of the consumer can never be properly conserved until he has acquired in some measure an insight into the processes that are known to the producer. Because society has separated these two types of

activity, our educational system must supply a scientific means of bringing back to the consumer the knowledge which he needs for his own protection.

If we begin with the general interest of the consumer as the justification for our standpoint of attack, we lay at the same time a broad foundation for later vocational specialization. If the student, in addition to protecting himself in the purchase of goods, wishes to become an intelligent consumer and producer, he has only to continue in more detail the type of study to which he has already been introduced.

Thus far we have been discussing what might be described as the direct educational advantages of a general course in household art. There is another and perhaps broader consideration which would justify such a course in the interest of the general study of economics. There is no body of concrete material which is more available than that which would be presented in a course in textiles for the general study of all economic relations. We have come to recognize in all our educational activities the general principle that the student must comprehend abstract relations by first mastering certain typical concrete relations. The various matters which have been discussed in earlier paragraphs need to be exemplified in a concrete way if they are to be understood by the student. The interdependence of the consumer and the distributer, the necessities of legal protection of the consumer in his relations to the producer, can be brought out in a very definite and concrete way as one studies the problem of clothing himself, economically and satisfactorily. Hence a general course in textiles, as one phase of household art, becomes the medium through which the student may be introduced to all sorts of economic relations.

Most of the textbooks on economics now used in college classes use illustrations which appeal chiefly to men. This is undoubtedly one of the reasons why college women manifest, in general, less interest in this subject than do the men. If the study of fabrics could be made the basis of a course in economics it would serve to arouse a broad general interest in that science. One might very properly advocate the use of this material for both men and women.

Having thus outlined in an abstract way the advantages of such a course in household art as an introduction to both the practical relations of life and the general study of economics, we may suggest a few typical examples of the lessons which may be formulated to make up such a course.

The demand for pure fabrics made from the four principal fibers of commerce, wool, cotton, silk, and flax, has long since outgrown the world's supply. It is a well known fact that if all the wool produced in the United States yearly was divided equally among its people, each person would receive less than a square yard of cloth. It is therefore as well to recognize the necessity for substitutions and by means of investigation become intelligent as to the qualities requisite for specific purposes. The desirability for such investigation may be apparent from the following occurrences which constantly happen in our daily contact with fabrics: (1) Dark spots appear on some worsted fabrics after a few days wearing; (2) the following fabrics have a tendency to tear very easily:—(a) Cheap India linen, (b) white linen for a waist at $1.00 per yard, (c) woolen dress materials from 75 cents to $1.00 per yard, (d) light colored silks; (3) (a) the white spots drop out of blue and white calicoes and lawns; (b) the white spots drop out of black and white checked silk; (c) the spots drop out of dotted muslins; (4) silk splits on the folds; (5) broadcloths tear easily and serges do not; and (6) gray wool fabrics generally fade, even when expensive.

Most of the processes in the manufacture of fabrics from the kind and preparation of fibers to the general practices in finishing would be required to account for the above which are our daily experiences with textile materials. Space will not allow me to answer all of them but let us consider No. 5 briefly:—"Broadcloth tears easily and serges do not." Here we have two cloths which illustrate the fundamental differences between woolen and worsted industries. Broadcloth, the typical woolen cloth, is a cloth made in the finishing. Serge, a typical worsted cloth is a cloth made in the loom. The understanding of these types lies in a knowledge of the manufacture of wool.

From the preceding paragraph it may readily be inferred that the concrete experiences which are necessary to form a basis for intelligent consumption must offer sufficient experimental work with fabrics to establish skill in the identification of standard materials. It must include, first, microscopic and chemical examinations which will result in the ability to (1) identify fibers, (2) detect and identify adulteration, and (3) understand the structure of fabrics and its relation to desirable qualities. In the second place it must include the mechanics of construction consisting of (1) hand sewing, (2) machine sewing, and (3) drafting.

With this body of experience as a basis we come to the larger eco-

nomic problems through a study of the textile industries. In this we come to the study of a particular type of organization, the factory, which we shall approach as we approach the study of any organization such as a bank or a corporation. We study a bank as an economic unit, producing, exchanging, and consuming the products of its particular activities, and its activities in relation to other units of different kinds. We therefore take up the study of these industries in the same way. We begin with the location of factories for special fabrics which we can only understand through a study of commercial geography and industrial history. It is necessary to know the evolution of the textile industries, its relation to general history, and the development of other important industries, in order to understand fully the relation between the present manufacturer and consumer.

In studying the factory as an economic unit, we discuss the history of industrial organization, beginning with the family, the work of different members of the family, and the gradual withdrawal of the work from the family to the factory based on the change from hand to power machinery, the work of women and children in the factories, the effect of this change on the home, the growth of factory towns, the gradual change in the character of the workers in the factories, immigration, wages, legal protection for workers, etc.

As a producing and distributing unit we try to understand the relation between the manufacturer and his supply of raw materials; the effect of this supply upon the processes of manufacture; the markets; the protection of industries as illustrated in the United States and other countries; the effect of wages upon his output; the relation of invention to the development of business; and many other questions which effect the consumer. In this connection there is another type of economic activity which makes a distinct demand upon our interest, although it is in reality but a part of the larger question, i.e., the manufacture of ready-made clothing. With our present social organization ready-made clothing will consume a part of the income of every individual. The same standards of judgment in selection of materials and in the training in construction are applicable to this problem.

In conclusion, whether we believe in technical education is not the great question before us. It is rather whether we feel and realize the complexities of modern conditions and the consequent necessity for scientific methods of work. If once we feel this, the introduction of courses in household art, Home Economics, and definite forms of technical education will be accepted in our colleges without question.

DOMESTIC ART, ESTHETICALLY CONSIDERED.

MISS MARY WYNNE SHACKLEFORD.

Director of Fine Arts, College of Industrial Arts, Denton, Texas.

Without attempting discussion concerning the ultimate nature of the beautiful, it may be affirmed at once that the beautiful is a phase of the good, and since we cannot live without God (good) in the world, neither should we attempt to live without the beautiful. One reason for the disagreement of authorities on a definition of the beautiful is that its phases are so multitudinous. There is a beauty of tone, of speech, of manner, a beauty in the well-ordered home where economic fitness goes hand in hand with the esthetic. One may exist without such influence, just as one may exist without appreciation of the humorous, but such a life is incomplete.

The teacher whose province it is to teach, more especially within the sphere of the esthetic, frequently finds it uphill work. In some schools, entrance upon the study of domestic art means beginning immediately creative expression. Students come, perhaps, without preparation, but they are ushered into the course as if fully developed and equipped.

With a view to obtaining information with regard to pre-requisite training in art for students entering upon a course in Home Economics, also as to art work for graduation, thirty representative institutions were investigated. These schools, with but six exceptions, require no pre-requisite art training for admission to courses in domestic art. Six demand satisfactory freehand drawing and hand sewing, one design, while two universities report "we do not teach the art side." Another says "we stress the technical side." Six institutions give fairly good courses in design and applied art, but only one of those investigated gives an adequate course including drawing, design, historic ornament, lectures on historic phases, esthetics of form and color, interior decoration, and costume design. We also find work in the following subjects offered in domestic art courses: Household decoration, basketry, leather work, block-printing, stenciling, dressmaking, millinery, etc. These subjects are catalogued for the most part as applied art, but are usually given without previous training in design. In none of the curriculums investigated, does one find adequate pre-requisite art training demanded for admission to the courses.

A knowledge of general history, of art history, historic ornament, a working knowledge of the principles of composition and design, an appreciation of color harmony, together with practical work in physics and chemistry, should be regarded as fundamental, and should precede and not parallel courses in domestic art.

Our preparatory training is too specific. The acquiring of cultural and informational knowledge is made too subordinate to the acquiring of technical skill.

If, as Professor Raymond tells us, "The art product is traceable to man's mental experiences and the elements of which it is constructed are forms borrowed from nature, and the method of construction and composition is a process of elaboration," how can the student, with inadequate fundamental training, be expected to have had sufficient mental experience to furnish material for elaboration? Rather is the student admitted to a course of study involving creative expression, with hand, eye, and perceptions untrained, as prepared to solve the problems which confront him as is the student of the scale of C prepared to go on the concert stage.

In literary work one must have, in addition to natural capacity, an amount of mental furnishing; just so is this true in the field of esthetic expression. One cannot represent in line, shade, or color what one has no conception of. The literary romancer, even, is a transposer from the real. In all creative subjects such transposition is obligatory.

With a well rounded course of study, the student would not only be prepared to create, but create something worth while. It may be argued that, if necessary time is given to acquire this fundamental information, the age of production will be advanced, but would it not be well to give time to a course of study that will so greatly increase efficiency? Would it not be well for the various institutions giving courses in domestic art to unite in demanding as a pre-requisite fundamental training along art lines, looking forward toward a standardization of the requirements for admission?

Education, as the etymology of the word implies, is to bring out, to educe capacities, this being accomplished by a system of eclecticism of the fit, and an elimination of the unfit, in thought and action or construction. In default of this educative system, the universal impulse to action may run more or less riot in the field of possibilities, but with proper training in fundamental principles, the foundation is laid for right thinking, and through right thinking, for right living.

Bacon says the man who builds his house in an unattractive locality puts himself in prison. This being accepted, it follows that one's house and immediate attaching space, howsoever attractive, do not constitute home. One's first and primary affections naturally center in the "house" and its immediate companionship, but the civic environment is also one's own, to be happy in and to assist in making. When Bacon wrote, every English hamlet represented a restricted unit, but since his time conditions have so broadened that the line of environment is no longer defined. As in the well ordered man, there must abide a pride of personality, a pride of race, so must there be a pride of nationality. In going over this broad land, from one city of beautiful structures to another, there comes to the right kind of an American a feeling of pride and ownership. There is an exultant consciousness of being a share-holder in what is beheld. This broad land is home.

What a scope for enterprise this outlook presents to ethical and esthetical parents and teachers!

Civilization in this country was not in a day created and set up by present incumbents, but has been largely transmitted. We enjoy much that cost us neither thought nor effort, thus bringing us in debt. This debt cannot be paid directly, we cannot even express gratitude to the transmitters, but, as nearly as our capacities will admit, we may pay this debt to each other and to the oncoming citizenship.

DOMESTIC ART METHODS OF TECHNICAL INSTRUCTION.

MISS RUTH WILMOT.

Pratt Institute.

Teaching can be vitally interesting or a stupid grind. It can be great fun or hopeless drudgery, according to the way we go about it, and it is often in the small points that the difference lies. As it is quite impossible in a twenty-minute paper on methods to deal at all comprehensively with the subject, I have chosen for discussion three specific salient points: First, the importance of the content of the student's mind; second, the necessity of a judicious and balanced choice between formal instruction and individual attention; and third, the relation of methods to the acquisition of technical speech.

As to the importance of the content of the student's mind, in the last few years the question of methods has been so strongly emphasized that many times they have become more or less cut and dried recipes which obtained results good but necessarily limited, while the necessity of the intuitive understanding by the instructor of the workings of the student's minds has been more or less overlooked. In the effort to improve her methods, the instructor goes into class to give a lesson with a carefully chosen plan in mind for its development. She is so concerned with the importance of the thing she is going to teach and the way she has decided to teach it that she forgets to feel the pulse of her class, as it were, and adjust and change her excellent plan to suit the needs and come within the comprehension of her students. Instead of concentrating on what is going on in the students' minds and determining whether they are comprehending the information which she is giving, she is thinking only of the subject she is going to teach and its development in a way that seems logical. She does not realize that what seems logical to her may seem quite the opposite to her students, nor that the subject which she understands so thoroughly, may be to them quite new and complex. To make it clear to them she must exert her imagination and look at it from their point of view. The details seem so simple to her of making a button hole, of getting the two sleeves for different arms each in its right armhole in the proper way, of making one sleeve look like the other, or of making the bias binding on the brim of a hat lie flat, that she can scarcely realize that her students find them just as puzzling and trying as she did when she first undertook them. So she tries to give instructions without laying the proper foundation, without getting together ideas in their minds to which to tie up their new ideas. She uses words and terms which mean nothing to the uninitiated student. She neglects to explain the reason for things because to her they seem obvious. She often entirely forgets to explain a few very minor details, and as a result the student very naturally makes a mistake and the instructor is surprised to find a girl so lacking in common sense.

If the instructor could go into class with her subject matter so thoroughly in hand that she could put her entire attention on the content of the students' minds, she would undoubtedly avoid many unfortunate mistakes. To put it in terms of psychology she should concern herself more with the apperceptive mass of her student. It requires a great deal of intuition and quick wit to get at the students'

point of view in the very beginning of the lesson and let that determine the method of development of the subject. The teacher who is versatile enough to change her line of attack to suit the occasion gets into her work a vigor and vitality which she could never attain by following a prearranged plan, no matter how logical it might be.

This same intuition or ability to look at the work from a student's point of view serves to warn the instructor of the right psychological moment to give the encouragement which a student needs to get over a difficult place. As a general rule constructive work for the beginner is done under rather high nervous tension. Failure to recognize and relieve this tension may bring about lamentable results. If we could call to mind the way we ourselves worked to get one side of that evening gown to look like the other or how hard it was to twist those wretched little tie wires tight in just the right place, I feel quite certain we would have distinct recollection of tired backs, flushed, burning cheeks, and cramped hands. Many of our students are feeling just as we did way back in that time when we were learning how. A little relaxation at such times is invaluable. Perhaps all the student needs to relieve this tension is to clear the table, wash her hands, get a drink, or rest her eyes by looking out of the window for a moment. Sometimes it would be better for her to put away that difficult piece of work which she has struggled so hard over and take up something else. After she is rested and her eyes and mind are fresh she can go back to the difficult thing and get it right.

There are times, too, when work gets in such a hopeless muddle that the student scarcely has the courage to tackle it. A very little help, sometimes only the trimming off of ragged edges or putting in a pin or two, may give her the necessary impetus to begin again and get it done. Students are very apt to "putter" and fuss around these difficult bits of work instead of attacking and finishing them. It is often a great temptation to the instructor to avoid the student who gets her work into a hopeless looking mess and to help the one who is working successfully to put on those finishing touches which are so easy and agreeable to do. This is not only unfair to the student in trouble but to the successful worker, for she is deprived of the great fun of doing the effective and interesting thing. She may not do it so well as her teacher, but nevertheless she should have the experience and fun of doing it herself and of doing it the best she can.

There is of course in every class the other extreme of the nervous student, the listless one who sits back on the end of her spine. Here

too the right kind of encouragement is most valuable, for it may furnish the necessary stimulus to more vigorous work.

This study of individual student needs and the experimenting in methods which comes as the result of the recognition of these needs makes teaching an immensely interesting business. The instructor begins to get very enthusiastic, and as a natural result she communicates her enthusiasm to her students and her teaching acquires the vigor and vitality necessary to good constructive work. We all know that we do our best work only when we have joy in the doing. We may do good work without enthusiasm for it, but it is not our best unless we love it. Interest and pleasure in doing things increase concentration and a gain in concentration is always a gain in efficiency.

To sum up the first point: More careful attention to the content of the students' minds results in more successful adaptation of subject matter and method to students' capabilities, the understanding of, and so the ability to help, the student who needs encouragement, and increased interest on the instructor's part resulting in greater enthusiasm in the class.

The second point is the question of the judicious balance and choice between formal instruction and individual attention. This presents many interesting problems. Formal class demonstrations are very valuable in giving general ideas, or a general view of a problem as a whole, but as a means of giving definite directions for working, the method has many drawbacks.

The greatest difficulty we all experience in doing things is not in understanding what the result should look like, but in grasping the way in which we are going to get this result, how to manage our tools, how to hold our material.

In giving a class demonstration as to directions for work, the instructor is often obliged to use her hands and hold her work in an unnatural and cramped position in order that all the students in the class may see what she is doing. In consequence they get a good idea of what the result should be, but a very awkard and clumsy idea of how to attain this result. Then they go to work in the most inconvenient way possible, the instructor interested in results fails to see and correct improper methods of attaining them, and the student acquires a faulty technique.

Again when a class demonstration is given, the students as a rule lay down their work and give their entire attention to the instructor. When they go back to work they often find to their great chagrin

that the directions which but a moment ago seemed so clear to them are only very vague and hazy in their minds. They find they cannot go on without special attention from the teacher. If they could have had their work in their hands and imitated her as she gave the directions, they would not have found this difficulty. Such imitation, however, is not often practical.

When imitation is not possible, the student's need of individual attention can be met by the use of illustrative material accessible to the class throughout the lesson and showing each step in the development of the problem.

Class demonstrations as directions for working are of value only as they are accompanied by adequate illustrative material, or as they allow the students to do the work with the instructor as she gives the directions. When it is impossible to prepare such material or practical for students to work with the instructor, better results are obtained by demonstrating to the class in groups small enough to enable the instructor to give individual attention to each student and to see that she goes to work in the best way and goes at it immediately.

The third and last point which I wish to bring out is the matter of speed. Speed in process, such speed as has special commercial value, is of course almost purely a question of practice and for this reason has very little educational value. Because of this and the time limitations, such speed has little chance for development in schools of college grade. There is, however, another kind of speed the development of which is a very important function of this school, for it is a kind of speed of the utmost educational value, a speed which is the result of wise planning of work, decision in judgment, and economy in movements.

Unfortunately the instructor does not often realize the importance to the student of practice in planning work. Instead of giving a general idea of the whole problem first, thus affording the student an opportunity to make some plan for the sequence of her work and then giving the direction for the details as need arises, she begins with the parts and doles out her directions piece by piece until the problem is finished. The student is unable at any time to see the problem of the work as a whole and because of this fails to see the details in their proper relation and value. Consequently she does not make a wise and economical plan of procedure, or indeed any plan at all.

Another great loss in speed is caused by an over-emphasis on perfection of technique. The student feels that she must reach very high standards of perfection, so immediately becomes apprehensive, worries for fear she will not do the thing well enough, starts to do it and takes it out, in other words "putters" instead of going at it with decision, doing the best she can and then improving on it the next time. This habit of "puttering" grows. If it is in sewing she takes a few stitches, looks at them, takes a few more and looks at them, and then decides to take them out and do it over. This interrupted work does not make for perfection of technique and lowers her speed to an appalling degree.

Informal class discussions which arise from the needs of individual students are of great value in developing good judgment and decision. If one member of the class needs help on any particular detail it is often well worth while to stop the rest of the class and get their opinion on the best way of doing the thing. They should be encouraged to suggest and decide for themselves, and if their suggestions are not good, they should not be discouraged and made to feel that they are quite lacking in ordinary intelligence. The instructor should simply explain why their way is impractical and hers a better way. Students should always be encouraged to think things out for themselves and to use their own judgment. Good hard common sense and good judgment are such valuable assets in any kind of constructive work, that no opportunity to allow them to develop these qualities should be neglected.

A third and very easily remedied loss of speed is caused by the use of inadequate or improper tools and by awkward, unskillful muscular manipulation.

These are only three of the many points which grow in importance as experience in teaching broadens. There are many others which have also a direct bearing on the vitality of technical instruction, and successful technical instruction is that which to instructor and student alike is vital.

DISCUSSION ON ECONOMIC AND SCIENTIFIC PHASES.

MISS ANNA F. BLOHM.

Ohio State University.

There is a very close connection between the economic and scientific phases of this work. To deal with textiles from the economic point of view would be impossible, for instance, without a knowledge of chemistry.

I have been very much interested in the different courses in textiles which are being given and this year I visited a number of schools for the purpose. Frequently I would expect a discussion along chemical or scientific lines but I would find the pupils weaving. Weaving was given as the textile work, but when it comes to the more advanced ideas of the subject it is not what we are aiming for, which is the economic point of view.

A suggestion for two years of chemistry in the course seems excellent, though it is one that we find in very few of the universities.

Occasionally we find an organic course required. It seems if we are going to introduce dyeing into our course, a knowledge of organic chemistry would be almost indispensible, as otherwise it would be arts and crafts work.

So long as we have to begin domestic arts work in the colleges and universities our work is not going to progress so fast as we would wish. We must require it in the grades and high schools. Otherwise we have not time for the economic side of the work, or for the chemical side which we must introduce into the colleges and universities if we want our women to be university and college women. We cannot give all of our time to even the technical and scientific phases. We must have opportunity for English and history, which have a very vital connection with the study of industrial conditions. We must have economics; we must have art.

The art department is entirely distinct from the household decoration, and in some of the large schools it is surprising to find how little pure art is required. At Ohio State University we require two years of art and two years of chemistry, and we feel that we could not possibly do with less. We do not stress the technical work; rather the educational phase, so to speak, with the emphasis upon the scientific, the economic, and the art phases of the work, with the technical phase reduced to a minimum.

DISCUSSION FROM THE FLOOR.

Miss Craig.—With reference to the difficulties met in the technical courses may I say that if a girl has a clear working idea of what she is going to attempt she will have less difficulty. That is why fundamental art work is so valuable. It trains in constructing working plans. This method also economizes time. It relates the art expression with scientific method, and when girls with the artistic temperament see the connection between these two classes of work in the application and that scientific interest is a part of all good creative work they take more kindly to the scientific and technical work. They should also have it for the sake of balance.

Miss Cooley.—It is time to take more active interest in the art phases of domestic art.

Miss Bevier.—I do not feel that I have a contribution to make except to say that the art side has been one of the most difficult ones that we have worked out. We have had, at the University of Illinois, for the past two years much better expression from the art department, but the field seems to me to be almost untouched.

I have one other thing to say, and I pass it on for the domestic art people to work for. There is a feeling that the art side does not have due representation among us. I feel that we get sometimes, at least, the things that we go after; and that if science has a better showing in Home Economics than art has it is because somebody has worked harder for science than somebody else has worked for art. The responsibility therefore is upon the art people to improve the definitions, to improve the product, to feel the responsibility.

Mrs. Anna Gilchrist Strong.—The public schools of Cincinnati require a great deal of art work, consequently every domestic science and art teacher must be trained along that line. We have a two years' art course—the first year in pure design, the second year in costume design, house decorating, and other applied design. We find it very useful and even the girls who are not artistically inclined take to it.

Mrs. C. W. Foulk, Ohio State University.—I have been very much interested for some time in domestic science and art. I was a teacher of the science and formerly could see very little on the art side; I thought there was not much to teach. After having a home of my own I found that there were big problems, and now if I were going back into the work I should be undecided which to take up. I think

the reason I had no appreciation of domestic art was because of the way it was taught to me, as merely sewing and pattern-making.

Mrs. J. W. Shaw, Ardwick, Md.—I have charge of the domestic science work in the colored schools and I have been particularly interested in this meeting because of an experiment I am making in connection with the Armstrong Manual Training School. A few weeks ago we rented a small house near it. I have been fortunate in getting the drawing teachers and the sewing teachers interested in this little home and whenever any question comes up on decorating or doing the carpentry work or the gardening, I appeal to these special departments. Although I am outside the art work I have been trying to get the domestic art teachers interested in it.

Miss Craig.—One of the problems that we must meet in the near future is that of real correlation and unification, by working out relative values in the factors entering into Home Economics. Is there any one who will speak to this proposition?

Dr. W. A. Hedrick.—I have been interested in the teaching of physics for a number of years, and I have been having experience which would be of benefit to the girls interested in this work but I have found only two or three applications. For instance, we have sets of experiments determining the strength of cotton, but we find that in such materials as cotton there is such great variation that we cannot do much. There are, however, many experiments which come to my mind of great interest in domestic art.

Mrs. O. N. Guldlin.—I may say I am delighted to hear of this movement for applied chemistry in household art. I have been a housekeeper for twenty-two years and realize the necessity of it.

Miss Van Rensselaer.—I should like to say a final word. We have a body of teachers here who are interested in domestic art. We have just heard from Mrs. Guldlin, chairman of the Home Economics section of the General Federation of Women's Clubs. Why should we not unite at one point, at least work together? We should ask for pure textiles, just as we are asking for pure foods. Why should we not have from this meeting a resolution in the interest of this movement?

Mrs. Murphy.—I move that we ask the resolutions committee to embody a section relating to pure textiles.

Mrs. Guldlin.—I second the motion.

The motion was carried, and the resolution was subsequently adopted.

WHAT SUBJECT MATTER SHOULD CONSTITUTE A WELL BALANCED COURSE OF STUDY IN DOMESTIC ART?[1]

SADIE SWENSON.

Assistant Instructor, Domestic Art Department, College of Industrial Arts, Denton, Texas.

The purpose of this brief discussion is to suggest the subject matter for a well balanced course of study in domestic art, and the method of accomplishing the aim set forth.

For many years investigators and teachers have made a systematic study of those sciences pertaining to food and nutrition. As a result of these experiments and investigations, domestic science is comparatively well established in industrial education. In the mind of the general public domestic art is a comparatively insignificant course, often listed as a minor topic under domestic science. What is the cause of this general opinion? The same sciences—biology, physiology, and chemistry—that form the foundation of domestic science also enter into the superstructure of domestic art. Yet though the significance of this fact is beginning to be recognized throughout the country, the majority of the schools are still adhering to the primitive content of study—sewing, dressmaking, and millinery—and are blindly pursuing it through the approach of least resistance, the sole aim of which is technical skill.

Since there is so much confusion in the minds of our educators regarding the content of subject matter in domestic art the definitions of the two words "domestic" and "art" are very pertinent:

"Domestic" means belonging to the household, "art" is a systematic application of knowledge or skill in effecting a desired result, especially in the production of the beautiful by imitation or design. From these definitions it is obvious that a well-balanced course must include other than mere technical interests which have but slight educational value. Contrasted with them are the shelter phases of domestic art. The numerous interests included in the subject matter should be approached through the artistic and practical problems pertaining to the home, its location, structure, decoration, and furnishings. The results of these existing conditions create either the desirable or undesirable home atmosphere. Landscape gardening

[1] Presented at the Christmas meeting of the Texas State Teachers' Association.

is an important and distinctive home interest which should be stressed on account of its broader relation to civic order and beauty.

Domestic art is applied art. In order to receive appreciable results in this work, a certain amount of art training provides that prerequisite medium which contributes to intellectual and spiritual growth, both of which are absolutely fundamental to constructive expression.

Textiles in their various uses for furnishing and clothing should be studied from the historic, scientific, economic, artistic, and ethical standpoints. Textiles should be approached historically. There is no surer method of arousing interest in any subject than by studying its history. The historical association coupled with the distribution, growth, structure, and preparation of the chief textile fibers more readily fastens these facts in the mind. The evolution of the textile fabrics is closely identified with the origin and development of the mechanical inventions which have revolutionized industrial and social conditions. With this historic setting the scientific field of textiles offers a rich field for investigation, and its value cannot be easily overestimated.

Women are the chief consumers of the textile production. Through ignorance of adulteration of textile fabrics on the part of these consumers, there is an enormous waste in the expenditure of time and money. Not until recent years has textile experimentation been systematically followed. It is to the science of chemistry that we owe the production of our beautiful fabrics so rich in color. It is also by this same science that we are imposed upon, to such a great extent, with the adulteration of materials. Objections cannot be raised against certain kinds of adulterations because the average buyer cannot today afford the pure fabrics, nor are they more desirable in many cases. But why should the consumer pay an all wool price for a piece of material when it proves to be one-half or three-fourths cotton? Why should she pay one dollar and fifty cents per yard for taffeta silk and receive a small amount of silk and a large percentage of metallic salts, etc.?

Some very interesting experiments have been carried out in this line in the textile course at the College of Industrial Arts this past term. Almost without an exception the 125 juniors taking the work have grasped the tremendous economic significance of this situation. By numerous simple tests they have realized there is economy in the selection of color in household furnishings and clothing as well

as in the fabric itself. Because of the characteristics of certain textile fibers they have found that it is more economical, in the long run, to pay a higher price and receive a better material. The processes of cleaning and dyeing are important features of this scientific phase which should not be neglected.

Having approached the study of textiles through the historic, scientific, economic, and artistic aspects we are ready to deal with the constructive or technical problems. Students armed with this prerequisite knowledge are prepared to consider intelligently such specific problems as decorative needlework and its various forms of application to house furnishings, undergarments, dresses, gowns, hats, pattern alterations, and laundry.

As the work is taught in the schools of this state, as well as in schools and colleges of other states, emphasis is laid only on the technical side. The method so often used in presenting this work is the model system. We do not hesitate to state that it is an antiquated form of instruction.

The following are some of the arguments advanced in its favor: That the learning of the stitches on the "little useless scraps" will arouse "determination, persistence, perseverance, painstaking accuracy, and patience;" that the cultivation of these qualities will awaken an "interest which results in encouragement, pride, knowledge, conscious power, and a good degree of satisfaction." But how much has the student gained of the relative value of materials and uses? What judgment and taste has been exercised? What conscious power has the student acquired when she has not been given a means for expression? What artistic feeling has been developed? Really of what educational value is this purely technical drill which is taught in so many of our schools? Weeks, months, and years are spent in making this scrap book. Whom does it benefit—the student, her family, her community? I speak feelingly on this particular method because my feelings are born of experience. I spent weeks making models. My highest aim was accuracy. I did not develop an atom spiritually, intellectually, or creatively. It is true I gained a knowledge of so many different kinds of stitches, but not at all of their application. Could I not have acquired the knowledge of the stitches and their application on an article that would have provoked a thoughtful effort and resulted in an artistic and practical form?

The application of the theoretical suggestions offered in subject matter can be applied in any grade. The historical view of textiles

may be presented so interestingly as to awaken and hold the attention of the youngest child. For example, the study of the primitive people is abundant in suggestions for textile problems. In the expression of these problems the various kinds of stitches may be employed as a means to that end.

Economy in textiles is a most important feature and should be early impressed upon the young consumer's mind. For instance, if the problem should be the making of a pillow case, the student should be instructed in the kinds of materials used for that purpose; the fibers from which those materials are made; and reasons why some fabrics are more desirable and more economical than others. Then let her investigate for herself the different widths and cost of appropriate materials. By this method she is thrown on her own responsibility and encouraged to exercise judgment and taste in her selection.

The artistic feature of textiles cannot be overlooked, because every article or garment, regardless of its simplicity or purpose, is applied art in form or in color or in both. Any instructor teaching textiles in any form, disregarding the application and being ignorant of art principles, errs unpardonably.

While the scientific phase of textiles cannot be entered into so extensively in high school work, the demonstration of certain simple physical and chemical tests can be performed by the teacher. Light, weather, and sun tests can be applied to colored fabrics, in connection with the laundry, with perfect success. Though these are scientific tests they are also significant economic features in furnishing and clothing which should be emphasized.

To teach the technical problems involved in domestic art without considering the various view-points is comparable to teaching any advanced science without the essential fundamental laws pre-requisite to any mental training. Definite results and marked progress cannot be any more anticipated in the former subject than in the latter. To be of value the content of subject matter must be presented in such a manner as to stimulate independence in thought, in judgment, and in taste. Eliminate these principles and you will remove the foundation upon which to build. The student's training should be of such a nature as to enable her to adapt herself to the complex organization of society: to solve intelligently the problems of wise purchases; to raise as well as to adjust the standard of living: to arouse an aspiration to attain the beautiful; and to awaken a broader sympathy and a desire to be of service to mankind.

BIBLIOGRAPHY OF HOME ECONOMICS LITERATURE.

MARY D. S. ROSE.

MAY 1, 1912.

1. FOOD.

Cheese and its Economical Uses in the Diet. C. F. Langworthy and Caroline L. Hunt. *U. S. Dept. of Agr., Farmers' Bulletin 487.*

Cheese—A Neglected Nutrient. Editorial. *Jour. Amer. Med. Assn.* April 6, 1912, p. 1016.

Casein and its Uses for Food. W. M. Seaber, *Sanitary Record*, vol. 49, p. 20. Commercial casein preparations.

The Utilization of Dairy By-Products as Food. *U. S. Dept. of Agr., Farmers' Bulletin 486.*

Condensed Milk. J. F. G. H. Coutts. *British Food Jour.*, vol. 13, p. 181. History, varieties, methods of preparation.

Bacterial Counts and Acidity Determinations of Milk as Delivered to the Consumer, based on a study followed for one year. Schorer. *Arch. Pediatrics*, March, 1912, pp. 200–203.

Cooking and Chemical Composition of Some English Fish. K. I. Williams. *Chem. News*, vol. 104, pp. 271–274.

Salt-Rising Bread and Some Comparisons with Bread Made with Yeast. H. A. Kohman. *Jour. Indus. and Eng. Chem.*, February, 1912, pp. 100–106.

The Ethics of Food: III. Bread. *Science Progress*, 1911, p. 536. Reviewed by W. D. Halliburton in annual report for 1911, *Jour. Chem. Soc.*, London.

Milling Tests of Wheat and Baking Tests of Flour. J. T. Willard and C. O. Swanson. *Kan. Agr. Exp. Sta., Bull. 177.*

Composition of Dry Gluten and its Relation to the Protein Content of Flour. G. A. Olson, *Jour. Ind. and Eng. Chem.*, 1912, March, pp. 206–209.

Acidity of Flour. C. O. Swanson. *Jour. Ind. and Eng. Chem.*, 1912, vol. 4, pp. 274–278.

The Study of Stringy Bread. E. Keyser and H. Delavel. *Compt. Rend.*, vol, 153, pp. 576–578; abs. in *Chem. Abs.*, February 20, p. 515.

2. NUTRITION.

Chemical and Energy Exchange in Sleeping Children. J. Howland. *Zeit. Physiol. Chem.*, vol. 74, pp. 1–12; abs. in *Chem. Abs.*, March 20, p. 768.

Mineral Salts and their Relation to the Dietary of Infants and Young Children. Hoobler. *Archives Pediatrics*, March, 1912, pp. 208–214.

Mineral Salt Metabolism; or, the Uses of the Mineral Salts to the Growing Infant and Child. Editorial. *Arch. Pediatrics*, March, 1912, pp. 161–164.

Dietetic Treatment of Infantile Tetany. Gruelle. *Arch. Pediatrics*, January, 1912, pp. 24–45.

Gastric and Pancreatic Secretions of the Newborn. Hess. *Proceedings of Society for Exp. Biology and Medicine*, vol. ix, no. 2, pp. 20–21.

On Creatin-destroying Bacilli in the Intestine and their Isolation. Twort and Mellanby. *Jour. Physiol.*, March, 1912, pp. 43–49.

Creatin and Creatinin Excretion in Recurrent Vomiting. J. P. Sedgwick. *Amer. Jour. Diseases Children*, April, 1912, pp. 209–216.

Beriberi, Rice, and Beans. Editorial. *Jour. Amer. Med. Assn.*, April 13, 1912, pp. 1118–1119.

Analysis of Rice; Effect of Polishing; Relation to Disease of Beriberi. Experiments reviewed by W. D. Halliburton. Annual reports for 1911, *Jour. Chem. Soc.*, London.

The Effect of a Diet of Polished Rice on the Nitrogen and Phosphorus of the Brain. Funk. *Jour. Physiol.*, March, 1912, pp. 50–53.

The High Calorie Diet in Typhoid Fever. *Am. Jour. Med. Science*, vol. 143, 1912, p. 77.

Digestion in Fever. J. B. Nichols. *Am. Jour. Med. Science*, vol. 142, pp. 93–95.

Diet in India. B. N. Ghosh. *Dietetics and Hygienic Gaz.*, vol. 27, pp. 470–475. Dietaries for natives and Europeans.

Studies in Nutrition. V. The Utilization of the Proteins of Cottonseed; VI. The Utilization of the Proteins of Extraction—Free Meat Powder; and the Origin of Fecal Nitrogen. L. B. Mendel and M. S. Fine. *Jour. Biol. Chem.*, vol. ii, pp. 5–26.

Metabolism of Development. III. Qualitative Effects of Pregnancy on the Protein Metabolism of the Dog. J. R. Murlin. *Am. Jour. Physiol.*, 28, pp. 422–454.

An Explanation of Hunger. W. B. Cannon and H. L. Washburn. *Am. Jour. Physiol.*, March, pp. 441–455.

Peristalsis, Segmentation, and the Mesenteric Reflex. W. B. Cannon. *Am. Jour. Physiol.*, April, pp. 114–129.

The Putrefaction Processes in the Intestine of a Man During Fasting and During Subsequent Periods of Low and High Protein Ingestion. C. R. Sherwin and P. B. Hawk. *Jour. Biol. Chem.*, April, pp. 169–179.

Protein Metabolism from the Standpoint of Blood and Tissue Analysis. O. Folin and W. Denis. *Jour. Biol. Chem.*, February, pp. 87–95; March, pp. 161–168.

3. Hygiene and Sanitation.

Ventilation of a Steam Laundry; Dust in Relation to Health; The Art of Vacuum Cleaning. *Heating and Ventilating Mag.*, vol. 9, March, 1912, no. 3.

On Agar-Agar as a Vehicle in Intestinal Therapeutics. Max. Emhorn. *Am. Jour. Med. Science*, February, 1912, pp 230–232.

Influence of Oral Sepsis on Digestive Disorders. Geo. M. Niles. *Am. Jour. Med. Sciences*, February, 1912, pp. 217–221.

The Clothing of Children in Relation to Physique and Development. Alice M. Burn and M. B. Edin. *The Child*, March, 1912, pp. 462–467.

Sanitation in the Philippines—Cleaning Up Manila. James Le Roy. *Modern Sanitation*, March, 1912, pp. 93–99.

The Sanitation of Savagery. Herbert M. Lorne. *Modern Sanitation*, February, 1912, pp. 45–52.

Possible Sources of Hospital Infections. Mary Tufts. *Dietetic and Hygienic Gazette*, April, 1912, pp. 246–247.

Certain Fundamental Principles Relating to the Activity of Bacteria in the Intestinal Tract. A. J. Kendall. *Jour. Med. Research*, vol. 25, pp. 117–187.

Chronic Constipation. Dr. Alfred Reed. *Jour. Amer. Med. Assn.*, April 6, 1912, pp. 997–998.

4. Textiles and Clothing.

The Value of Fiber Testing Machines for Measuring the Strength and Elasticity of Wool. J. A. Hill. *Wyoming Exper. Sta. Bull., 92.*

Some Interesting Indian Textiles. *Am. Wool and Cotton Reporter*, April 11, 1912, p. 495. Concerning Indian blankets.

Some Old-Time Wall-Papers. Winifred Fales. *Am. Homes and Gardens*, April, 1912, pp. 122–125.

Real Tapestries: What They are and Something about Buying Them. Geo. Leland Hunter. *Am. Homes and Gardens*, February, 1912, pp. 45–48.

Tapestries of Today. R. V. Goodhue. *House and Garden*, February, 1912, pp. 15–16.

How to Buy Hosiery. Carolyn Trowbridge. Radnor-Lewis. *Good Housekeeping*, March, 1912, pp. 412–417.

The Inside of a Shirt-Waist Factory. Clara Lemlich. *Good Housekeeping*, March, 1912, p. 367.

The Dry Cleaning of Garments. C. G. James. *Good Housekeeping*, February, 1912, pp. 222–223.

The Willow Plume Industry. M. C. Trowbridge. *The Household Arts Review*, February, 1912, pp. 46–48.

My Experience in Reviving Old Embroideries. Mrs. Newell. *Handicraft*, February, 1912, pp. 379–387. Hand vs. machine made embroideries.

What Can High Schools do Better to Help the Industries? Fred. D. Crawshaw. *Manual Training Mag.*, February, 1912, pp. 193–204.

King Cotton. L. J. Abbott. *Independent*, March 7, 1912, pp. 509–513. Benefit of cotton-picking machine.

A Step Towards Artistic Dress in America. Grace L. Hitchings. *The School Arts Book*, March, 1912, pp. 677–683.

A Jute Substitute from China. Lock Haven, *Tetxile World Record*, March, 1912, p. 76.

Practical Dyeing: Silk and Artificial Silk. Reumark, *Textile World Record*, February, 1912, pp. 117–119.

5. Education and Social Work.

The Feeding of Necessitous Children. D. Forbes and J. Lambert. *Lancet*, ii, 1911, pp. 239–240.

Food Wastes in Public Institutions. Editorial. *Jour. Amer. Med. Assn.*, April 13, 1912, pp. 1116–1117.

The Home and the Market. Martha Bensley Bruère. *Outlook*, March 30, pp. 732–738.

The New Home Making. Martha Bensley Bruère. *Outlook*, March 16, pp. 591–595.

Course in the Use and Preparation of Vegetable Foods for Movable and Correspondence Schools of Agriculture. Anna Barrows. *U. S. Dept. of Agr., Office of Expt. Stations, Bull. 245.*

Suggestive Outline of Domestic Art Course for a High School. Mary E. Eastwood. *Household Art Review*, February, 1912, pp. 38–45.

Vocational Training in Our Public Schools. Mary Josephine Mayer. *Review of Reviews*, April, 1912, pp. 449–456.

Industrial Schools in Germany. *Pedagogical Seminary*, March, 1912, pp. 112–115.

Social Worker in the Hospital. Brown. *Diet. and Hygienic Gazette*, April, 1912, pp. 219–222.

Nursing as a Vocation for the College Woman. Edna L. Foley. *Nurses' Journal of the Pacific Coast*, February, 1912, pp. 54–63.

The New Meaning of Public Health. Robert W. Bruère. *Harpers*, April, 1912, pp. 690–696. Concerning the public health movement in Pennsylvania.

6. Miscellaneous.

Living Costs: A World Problem. Robert Coit Chapin. *The Survey*, February 3, 1912, pp. 1671–1672.

The Modern Sleeping Room. Cooking. *Boston School Mag.*, February, 1912, pp. 307–312.

Household Decoration. Helen Binkerd Young. *Cornell Reading Courses*, vol. 1, no. 5, Farm House Series, no. 1.

Household Furnishing. Helen Binkerd Young. *Cornell Reading Courses*, vol. i, no. 7. Farm House Series, no. 2.

How Reduce the Meat Bill? Jessamine Chapman. *Boston Cooking-school Mag.*, February, 1912, pp. 323–325.

The Ethics of Gastronomy and Dietetics. Janet M. Hill. *Boston Cooking-School Mag.*, April, 1912, pp. 435–437.

The Passing of Pots and Pans. Elenora Elizabeth Reber. *American Food Journal*, January, 1912, pp. 21–22.

CORRECTION. Mrs. Lynden Evans has accepted the chairmanship of the proposed Housekeepers' Section of the American Home Economics Association, and the work of organization is actively under way. The initial conference has been deferred until autumn, when it will probably be held in Chicago.

SUMMER MEETINGS, AMERICAN HOME ECONOMICS ASSOCIATION.

The American Home Economics Association has announced three gatherings for the summer of 1912: The Administration Section will meet at Lake Placid, New York, June 22–26; there will be a Home Economics program at the National Education Association convention at Chicago, July 6–12; and the Graduate School of Home Economics, which is conducted under the auspices of the Association, will be held July 1–26, at East Lansing, Michigan.

The Administration Section will open with a brief business session Saturday, June 22, and the four-day program will include among other features the following papers and reports: Report of the education committee on instruction in institution administration, Miss Sarah Louise Arnold, Simmons College; practice fields in training for household and institution management, Miss Emma H. Gunther, Teachers College; report of laundry committee on organization of institution laundries, Miss S. Maria Elliott, Simmons College, chairman; scientific management in the household and the institution, Mr. F. B. Gilbreth; time studies of household work, Miss Effie Raitt; report of committee on elementary school lunches, Miss Alice Boughton, Philadelphia, chairman; rules and directions for employees, and score-cards for measuring efficiency in employees, Mrs. Annie Dewey, Lake Placid Club; an investigation as to the position of dietitian, Miss Susannah Usher; report on food administration—the equipment and organization of kitchens for a unit of five hundred; distribution per capita of food costs for the different food items, Melvil Dewey; problems in the administration of the individual household, Mrs. Robert Bruére, New York. Other topics which may be treated are commercial laundries and bakeries; floor plans of college dormitories; and a conference on progress for the private household.

All interested are invited to attend the conference. It will prove particularly interesting to persons engaged in some form of administrative work related to the home and the institution, or in education related to administration, but teachers of Home Economics will find this gathering, as those of preceding years, of much significance to them.

The American Home Economics Association will coöperate with the National Education Association in a one-day program at the convention of the latter association in Chicago, July 6–12. The complete program of the National Education Association can be obtained by addressing the secretary, Mr. Irwin Shepherd, Winona, Minnesota. The Home Economics program will be given July 11, and will be as follows:

2.30 p.m., Chairman, Miss Isabel Bevier, president of American Home Economics Association. General subject, The economics of the household: (1) Distribution of income on $500, $1000, and $2000 per year for a family of five, two adults and three children, Miss Mary S. Snow, supervisor of household arts, public schools, Chicago, Ill.; (2) dietetic standards for these various households, Miss Isabel Bevier, head of the department of household science, University of Illinois; (3) obligations to society for the three standards presented, Mrs. Raymond Robbins, head of the National Woman's Trade Union League, Chicago, Ill. General discussion, Miss Irene B. McDermott, director of the department of household arts, Allegheny High School, Pittsburgh, Pa., Miss Carrie E. Lyon, instructor in cooking and housekeeping, Margaret Morrison Carnegie School for Women, Pittsburgh, Pa.; Mrs. Mary D. Chambers, head of the department of Home Economics, Rockford College, Rockford Ill.

In addition to the National Education Association meetings, the Home Economics Association will hold during the convention a conference on problems of housekeeping. This first Housekeepers Conference is being organized by a committee of which Mrs. Lynden Evans of Chicago is chairman. Former teachers of Home Economics who are now keeping house and all home women interested in progress for the home are urged, even if they can not attend the meeting, to send their names to Mrs. Evans, who may be addressed at The Brighton, Washington, D. C. until the adjournment of Congress, then at Congress Hotel, Chicago, Ill. It is hoped to organize a group of people within the Home Economics Association who will work especially upon problems of the private homes.

The third gathering of the summer, the graduate school of Home Economics, will be held at Michigan State Agricultural College, East Lansing, Michigan, July 1–26. It should bring together for the unusual courses offered all school and college teachers of Home Economics who can possibly attend. The preliminary program is printed in the April JOURNAL OF HOME ECONOMICS (pp. 170–171) and circulars may be obtained by addressing Mr. A. M. Brown, Registrar, East Lansing, Michigan.

BENJAMIN R. ANDREWS,
Secretary, American Home Economics Association.

EDITORIALS.

Value of the Journal.

We greatly regret that we are unable to furnish certain back numbers of the JOURNAL which are increasingly called for in order to complete sets for binding. The permanent value of a file of the JOURNAL is now well recognized by individuals and libraries and a reprinting of these early numbers may be found advisable in order to meet this demand. These three goodly volumes, to which a fourth will soon be added, contain material to be found nowhere else. In them experts in various fields have treated in a masterly way the many subjects that form the basis of this newest of the applied sciences and have helped to place it in its present dignified position before the country.

As one recent subscriber has written, "That table of contents whets my appetite. All my life I have been interested in these subjects and considered them very important, but until lately I did not know that first-class people were writing about them in this thorough way."

Treasure your JOURNALS. Bind them if possible, but if you cannot keep them, put them into the hands of those whom they will help or return to our office for distribution. We have many requests.

The Spending of the Income.

In the April number of the JOURNAL appeared the interesting address of Dr. Claxton, our recently appointed U. S. Commissioner of Education, as given at our annual meeting, but those who listened to this address will miss in this report of it one paragraph which raised an important subject to a high plane. In dwelling on the responsibility of the woman as the spender of the family income, he said, "A dollar is a sacred thing, it represents labor, the unit with which we measure a man's work for a day or a fraction of a day. Shall we squander human life?"

We cannot recommend to women's clubs a better topic for study during the coming season than the division of the income of several grades over the different items it is supposed to cover. It is a study in comparative finance and it is warranted to strike deep. Ethical questions beset it on every side.

We find out very soon that life is a question not of *what* but of *which*. If we are above the line of absolute necessity in food, shelter, and clothing, we have the power of choice, and what we choose shows what we value. The members of a family have been known to give up desserts for the winter, in order that they might hear the best music; another has replaced butter with other fats, and the result is a coveted piece of new furniture.

To train ourselves to a better balancing of the income and to be better buyers is not dazzling or spectacular work; it is humble and workaday, but it is along the line of duty. Women produce, it is said, about 1/1000 part of the marketable wealth of the country; they consume or direct the consumption of more than half of it; they must learn to do this intelligently or they are not training and organizing *their work*.

The "power of choice," think what that means! If you have it to any degree you belong to the fortunate classes. Either you have been enabled by education and opportunity to earn your own living, or some one worked for you long ago so that your "wages" are "paid in advance," to use the apt phrase of Miss Grace Dodge, or some one is working for you today. In our honest moments most of us are willing to own that we are getting out of this world more value than we are turning back into it.

This means that we must realize the responsibility that belongs to the great middle class in any country, those whose incomes lie between poverty and riches. It is an immensely important class. It upholds standards of comfort and refinement, out of it come most of the leaders; it has in general worked hard with brain and hand and understands conditions both below and above its own; it bears more than its share of all public burdens. Its needs should be met, its problems studied, and to that it is that Home Economics invites you. The study of this middle class income is as greatly needed as that of the families who live below the poverty line, for poverty is in itself what Mrs. Simkovitch has called "an automatic standardizer." One cannot make mistakes in spending what one has not, but as incomes go up in the scale this power of choice enters in and mistakes abound. The mistakes are said to be the greatest in the incomes between $2000 and $10,000.

We venture to launch a new combination of capital letters! They stand for "Central Bureau of Information and Advice to Housekeepers."

C. B. I. A. H.

It already exists, a branch of it, and is known as the C. O. S. but it extends its help only to the very poor. Our charitable organizations, beginning with the pressing need to fill the coal bin and the empty pantry, have been forced to take up the larger question of those maladjustments that produce poverty. They strive to abate "the inconvenience of ignorance," to use the quaint phrase of John Eliot, the early missionary to the Indians.

They now send out, even to those who ask no financial help, the "visiting lady" who studies the problems of the home in the only place where it can be studied, in the home itself.

But the "inconvenience of ignorance" is found everywhere. For the middle class home, for those women who can afford to pay a fee for such service, a "Bureau of Information and Advice" is greatly needed. Women once knew all about the things used in their households, for they themselves made them or saw them made. In our modern complicated life such a bureau is needed as an intermediary between the consumer and the various business agencies that supply her daily needs and who are solely concerned in selling her their product.

And how is the household to make its adjustments to new forms of industry and to the outside world which now bears such a different relation to it? Intelligent women are asking such questions as these: What ought we to consider the essentials of a home? What work can be done advantageously by the woman who must be at home to look after little children and what work is best done outside? What is the supervision of bakeries and laundries in our town? Is cost accounting applicable to my small household? What system of accounts will give me the best training for the least expenditure of time? How shall I get the best results from my cookstove? What is the best book on practical dietetics? How shall I go to work to make a fireless cooker? A club of ten want to own together a vacuum cleaner. What one do you advise? Please give the tests needed to tell wool from cotton in buying dress goods. Does it pay to sift cinders? How shall I remove ink spots from a delicate fabric?

It may be said that all such subjects are treated in the daily paper and in the pages of the women's journals. Yes, and often ably, but in other cases superficially and wrongly, and whether the answer is

good or bad the average reader has no means of knowing. If to one who enquires how to keep eggs from spring to fall eleven ways are given, among which is not included the one and only way recommended by the Department of Agriculture, must not such information be counted as worse than none?

But far more serious is the fact that newspaper work is and must be of only passing value. The writer visited one newspaper office where the household column was ably conducted and heard conversations over the telephone with professors in a leading university who were doing their duty in "extension" work by answering such important questions as "What is the food value of alcohol?" and "What advice shall be given to amateur collectors of mushrooms?" Such answers serve for the day only, they are not available for future reference at a moment's notice and the page that contained them is soon in the refuse heap.

Waste of good work as of good material of any kind is distressing—on the other hand how great the satisfaction that comes from the assembly of like facts to form true conclusions and the proper filing of valuable information so that it may be accessible to those who need it at any time! For this the work of trained and disinterested people is needed, and the service of a well-established and regulated bureau whose force understands the great value of *continuance* and the methods thereto.

How to Begin the Bureau.

The essential features of such a Bureau are a woman and a card catalogue. Around these all the rest will order itself. A woman of good sense, experience, and training would be able to answer off-hand many of the questions that puzzle the young housekeeper. Her card catalogue and reference books will answer many more and she will be in official connection with experimental laboratories and wise people all over the country to whom more difficult matters can be brought. The editors of this JOURNAL during the last three years have come into touch with hundreds of sources of information on practical topics, but all is unclassified, unavailable to the seeker.

Such a bureau would easily expand into a larger office with advisers and helpers and be part of a model house with a permanent exhibit of housekeeping appliances. And the visiting housekeeper to go into

any given household on call to study its problems would be a natural outgrowth.

When the women of any community or a few of them feel the need of such a bureau, let them first enquire if it is not possible to start it in connection with some already existing agency. Have you a "Town Room" where a desk would be furnished for the initial experiment? Is your Y. W. C. A. ready to expand in this direction? In any case, begin with a well-paid director, whose first year's salary must be guaranteed by a responsible group. Her first work will be to appear before clubs and other gatherings of women to give actual illustrations in great number of the help that may be expected through such a bureau, and to gather together permanent help for such a movement. Let us add that such a bureau is considered feasible by the New England Branch of the American Home Economics Association and that steps have been taken toward its establishment, as explained on page 188 in our April number.

NEWS FROM THE FIELD.

Oklahoma Agricultural and Mechanical College.

The technical work of the division of domestic science and arts is divided into two departments—domestic science and domestic arts. Miss Minna A. Stoner is dean of the division of domestic science and arts, dean of women, and professor of domestic science. Miss Iva McBride is assistant instructor of domestic science. Miss Margaret Evans is professor of domestic art, and Miss S. Cage is assistant instructor.

The courses offered by the division include a four years' course leading to the degree of Bachelor of Science; a teachers' normal course in connection with the normal division of the college, leading to the degree of Bachelor of Science; and elective courses with prerequisites offered to students in the science and literature division, with the same degree as offered in the courses previouslymentioned. There is also a two years' course for those who for lack of time and preparation are unable to devote the entire four years to college training, but who desire to have a better knowledge of home management and all matters concerning the welfare of the home, its care, and economic problems.

The prerequisites for all of the courses except the short course are chemistry, physics, and biology. Certain courses in drawing and applied art are prerequisite to the advanced courses in domestic art. Two years of chemistry are required in the domestic science course leading to the degree of Bachelor of Science. One year of architecture has been added to the technical course in the domestic art. English is offered throughout the four years, except to those taking the teachers' normal course, who take up pedagogy, psychology, education, school management, etc. instead.

The courses of study have been greatly strengthened by these new changes, and the department will further expand as means and opportunities afford. The laboratories are now located in the new hall for women where lecture rooms and office rooms are also provided. Each winter a short course of one week is offered to the housekeepers of the state. Recently the upper class girls have organized a society called the Ellen H. Richards Society of Home Economics, which is doing excellent work.

Iowa State College.

The new Home Economics building was formally opened May 1. It is hoped to present a description of the building in a subsequent issue.

Second International Congress on Teaching Home Economics.

This congress will be held in Gand, Belgium, about the last of June, 1913. The first congress was held at Fribourg in 1908. The plans of the congress are not yet announced, but anyone wishing to become a member may do so by sending ten francs to the treasurer, Mme. le Jeune d'Allegeers-cheque, 16 rue des Palais, Brussels. This will ensure the receipt of the reports of the congress, which will comprise at least five volumes. Questions regarding the congress may be addressed to this JOURNAL.

BOOKS AND LITERATURE.

Food for the Invalid and the Convalescent. Winifred Stuart Gibbs. Macmillan Company, 1912, pp. 81. $0.75 net.

The author of this little volume has been for five years visiting dietitian for the New York Association for Improving the Condition of the Poor, teaching women in their homes how to provide wholesome food for their families. The book treats in the simplest possible language such topics as How to Buy, How to Keep Food from Spoiling, and Why Dirty Stores are Dangerous.

How to Eat and Why to Cook are rather inaccurate titles for sections dealing with the functions of food and the general reasons and chief methods of cooking. It would seem better to place "Food that gives working power" before "Food that gives heat," especially as we do not usually eat food primarily to yield heat. "Food that gives muscular strength" seems tautological with "Food that gives working power."

About half of the volume (containing about eighty pages) is devoted to directions for selecting and cooking simple and inexpensive dishes suitable for the sick and convalescent, and the remainder to special menus for the family, adapted from the author's pamphlet, Lessons in the Proper Feeding of the Family, diet for young children, quoted from Miss Farmer, and some special diets for the sick, including diet for constipation and for the first stages of tuberculosis. The advice is sound and practical, and the book will prove useful to dispensary workers for whom it is designed, and to other social workers without technical knowledge of the feeding problem.

MARY SWARTZ ROSE.

Educational Status of Nursing. M. Adelaide Nutting. *United States Bureau of Education Bulletin*, 1912, No. 7.

This bulletin brings together the results of an investigation as to conditions in nursing education, with recommendations.

The author believes that the training of nurses is at present inadequately cared for. The hospital is manned with the exploited services of the nurse, and the educational courses provided are meagre and suffer from the demands for practical services within the hospital. Progress may come through the establishment of separate educational institutions and training courses for the nurse, which may be affiliated with the hospital, as is the medical school.

There is thought to be an opportunity here for university schools of Home Economics, which undertake a department of nurses training, as has been done at the University of Minnesota, with its School of Nursing, and as has been carried out in a less extensive way by other university relationships to hospitals. Home Economics workers may well remember that nursing was originally a household art, and our technical schools should stand ready to develop affiliations with this branch of technical training.

Process of Disinfection by Chemical Agencies and Hot Water. H. Chick. *Jour. Hyg.*, 10, 1910, no. 2, figs. 21, pp. 237–286; abs. in *Hyg. Rundschau*, 22, 1912, no. 6, pp. 370, 371.

In the amount of time required, disinfection may be compared to a chemical reaction of the bacteria and the disinfecting agent. As regards quantity of materials, it follows the law of proportional mass, and as regards temperature the law of Arrhenius. In disinfection with hot water (45 to 55°), the process follows a course similar to that of the coagulation of albumin. Concentration, time, and temperature act in accordance with the same laws as in the case of chemicals. The presence of even small quantities of acid also has a strong influence. It is probable that disinfection by evaporation and sunshine follow similar laws.

Greasy Marks and Methods of Removing Them—Stains and their "Cures." *Illus. London News*, Amer. ed., 50, 1912, no. 1296, p. 348, fig. 1.

An illustration with descriptive data showing graphically the relative efficiency of different solvents for removing lubricating oil, coal tar, resin, and other substances.

A New Ice Chest. C. Zelmanowitz. *Biochem. Zeitschr.*, 39, 1912, nos. 1–2, pp. 151–154, fig. 1.

This article describes an ice chest devised for laboratory use in the Kaiserin-Auguste-Victoria Institution for the Combat of Infant Mortality, in the German Empire. The external measurements are 2.25 m. by 1.50 m. by 0.70 m. Beginning with the outer surface the box is constructed of a pine case, a layer of insulating material, and an interior wooden box lined with tiles. Adjustable shelves of perforated zinc sheets are supported by nickel-plated rods fixed at frequent intervals in the interior. The ice chamber is at the upper left hand corner of the box and can contain 2 cwt. of ice. Above the box at the right is a small electric motor by means of which air is driven into the ice chamber and kept in continuous circulation through the box. In cold weather, air of the temperature of outdoors may be pumped through the box, thus lessening the need of ice. The front of the ice box contains 8 small doors, the idea here being to lessen the loss of cold when the box is opened. Even when due allowance is made for the cost of the motor and power this box has been found more conomical than one which relies entirely upon ice for its cooling, and has a further advantage of constant ventilation.

[The ideas embodied might prove useful in ice chests for home or institution use.]

Building a Concrete Porch Floor. J. E. Wing. *Breeders' Gaz.*, 61, 1912, no. 11, p. 652.

Practical directions for building a porch of reinforced concrete are given.

Standards of Food Products in Commerce. A. McGill. *Pure Products*, 8, 1912, no. 4, pp. 209–217.

This article is an address read before the Canadian Section of the Society of Chemical Industry. It contains a discussion of the general principles which underlie the legal standards set for purity in food products, the use of preservatives, coloring matters, and similar topics.

Thoughts on the Action of the Enzymes, with Special Reference to the Nature of Pepsin. J. E. Hancock. *Amer. Jour. Pharm.*, 83, 1911, no. 8, pp. 373–376.

A discussion of the modern theories regarding the nature of enzymes, with special reference to the atomic theory.

The Business Side of Farming. Part I, Farm Records. J. A. Bexell, A. M., Dean of School of Commerce, Oregon Agricultural College, Corvallis. Second edition.

This treatise will be found of considerable interest and help to instructors in Home Economics who are concerned with instruction in household accounts. One chapter of the bulletin is devoted to this subject. Blanks may be secured to accompany the bulletin, if one wishes to use it in instruction.

It is suggested that some of the colleges which are publishing material on Home Economics would do well to bring out a popular work on household accounts.

SOME RECENT BOOKS ON HOME ECONOMICS.

Equipment for Teaching Domestic Science. Helen Kinne. Whitcomb and Barrows, Boston. Price, 75 cents.

The Book of Entrees. Janet M. Hill. Little, Brown and Company, Boston, 1911. Price, $1.50.

The Cupboard Papers. Fin-Bec. Chatto and Windus, London. Price, $2.00.

Public Health and Housing. John F. J. Sykes. P. S. King and Son, London. Price, $1.50.

The Lunch Room. Paul Richards. Hotel Monthly Company, Chicago. 1911. Price, $2.00.

Dictionary of Foods and Culinary Encyclopedia. Herman Senn. Food and Cookery Publishing Agency, Westminster, England. Price, 60 cents.

1912 Book of Home Building and Decoration. Henry C. Brown.

The Foundation of all Reform. Otto Carqué. Cosmos Publishing Company, Chicago.

Interim Memorandum of the Teaching of House Craft in Girls Secondary Schools. Board of Education, London. Price, 8 cents.

Housekeeping and Household Arts. Alice M. Fuller.

The House and its Equipment. Lawrence Weaver. Scribner. Price, $5.00.

Home Hygiene and the Prevention of Disease. Norman Ditman, M.D. Duffield and Company, New York City. 1912. Price, $1.50.

Educational Needlecraft. Swanson and MacBeth. Longmans, Green and Company. Price, $1.35.

School Hygiene. Hope Brown. University Press, Cambridge. Price, $1.00.

Motion Study. F. B. Gilbreth. Van Nostrand, New York City. Price, $2.00.

Primer of Sanitation. Ritchie and Caldwell, World Book Company, New York City. Price, 50 cents.